

# DANBURY BRANCH IMPROVEMENT PROGRAM TASK 5

## ENVIRONMENTAL TECHNICAL MEMORANDUM IMPACTS ANALYSIS

STATE PROJECT 302-008



### SECTION 6: THREATENED AND ENDANGERED SPECIES

DECEMBER 2011

## SECTION 6. THREATENED AND ENDANGERED SPECIES

### METHODOLOGY

Project impacts on threatened and endangered (T&E) species were evaluated by comparing the locations of the proposed project improvements with the latest available Connecticut Department of Energy and Environmental Protection (DEEP) Natural Diversity Database (NDDDB) data. The date of this data was December 1, 2010 and it reflected the changes to the State Endangered Species list that became effective on July 1, 2010. As described and defined in Tech Memo 1 (Existing Conditions), this list includes state and federally listed plant and animal species, plus additional species of rare or declining occurrence in the state. These species and their essential (or critical) habitats may be protected at both the federal and state levels, depending on the species' listing status.

The December 2010 data included locations of critical habitat not previously mapped by the NDDDB data layers. Where these critical habitat locations are close to NDDDB records potentially affected by the Danbury Branch improvements, they are so noted in this Technical Memorandum. As described by the *Connecticut Critical Habitats Resource Guide* (available online at <http://www.cteco.uconn.edu/>), the 25 mapped habitats have been documented to be the "most rare, unique, and threatened habitats" in the state. They are a subset of the "key habitats of greatest conservation need" identified in *Connecticut's Comprehensive Wildlife Conservation Strategy (Strategy)* (DEEP 2005). The stated purpose of the Connecticut critical habitats information is to "highlight ecologically significant areas and target areas of species diversity for land conservation and protection".

There are numerous NDDDB records that overlap the study corridor. The records, shown as circles, were numbered for reference and mapped on USGS base maps in accordance with DEEP coordination requirements. Records that stood alone were individually numbered. Groupings of records that merged together were lumped into one number. There were 18 NDDDB records or groupings along the study corridor. Their locations are shown on the figures in Appendix A (within the correspondence sent to the DEEP)

Using the DEEP coordination protocol relative to NDDDB records, the DEIS team prepared a coordination package to inform the DEEP about the project activities in the vicinity of the records and to request information about potentially affected species and/or habitats in these locations. The response from the DEEP provided information about the plant and animal species that may be affected by the project. The coordination package to the DEEP and their response (September 22, 1011) are included in Appendix A. [Note that the sheet numbers referenced in the DEEP letter refer to the figure sheet numbers submitted to DEEP in the coordination package.]

### IMPACTS

For each alternative, the potential for direct and indirect impacts to T&E species and their habitats can be attributed to the construction of the following major project elements:

- New or improved (existing) passenger stations
- Rail reconstruction
- Structures and bridges
- Traction power systems (electrification)
- Track reconfigurations, sidings, and connections
- Storage, maintenance yards

The state-listed plant and animal species potentially affected by the Danbury Branch improvements were identified by the DEEP in their coordination letter dated September 22, 1011 (see Appendix A). The DEEP also outlined avoidance measures, best management practices for design and construction, and, in some cases, field surveys to determine the presence or absence of the species at the project sites prior to further stages of project design or construction. The species, preferred habitats, corresponding project (improvement) sites, and DEEP's impact avoidance and minimization recommendations are summarized below in Table 1 **Error! Reference source not found.**

There are no federally-listed species potentially affected by the project, based on coordination with the U.S. Fish and Wildlife Service (USFWS) and as reported in Technical Memorandum 1. The USFWS noted, however, that the New England cottontail (*Sylvilagus transitionalis*) is known to occur in Brookfield and New Milford and that this species is a candidate for listing under the Endangered Species Act. The USFWS encourages attempts to avoid adverse project effects on the habitat of this species, which consists primarily of heavily-shrubbed early-successional habitats. Such habitats include wetlands with beaver flowage, idle agricultural lands (old fields), power line corridors, railroad rights-of-way, and regenerating forests.

Impacts were deemed possible if a proposed improvement was located in an area noted as a concern by the DEEP (in their coordination letter) and if the improvement would alter habitats associated with the subject species. Permanent impacts could result from activities such as: excavation and/or placement of structures and fill material; spillage or leakage of contaminants; and other alterations of land or water within habitat areas where T&E species occur. Temporary impacts could result from vegetation clearing, construction vehicle access, temporary water handling, material laydown areas, and equipment staging areas. Indirect impacts were assessed by considering the potential for off-site or delayed effects, such as new barriers to wildlife movement or degradation of habitats over time (e.g., through erosion and sedimentation of soils or invasive species invasions).

The improvements with potential direct and indirect impacts on state-listed species are described in more detail below. Figures showing the locations of the NDDDB records in relation to the proposed improvements are included in Appendix A, within the coordination package sent to the DEEP dated August 9, 2011.

**Table 1**  
**Connecticut-Listed Species Potentially Affected by the Danbury Branch Improvements**

Common Name (Description)	Scientific Name	Listing Status*	Preferred Habitat	Project Sites within Area of Potential Effect of NDDB Record	Suitable Habitat Observed at Project Site?	CTDEEP Avoidance and Mitigation Recommendations
<b>PLANTS</b>						
Water marigold (aquatic plant)	<i>Bidens beckii</i>	T	Ponds and quiet streams; typically shallow waters	<ul style="list-style-type: none"> <li>Alt C/Curve 15C Umpawaug Pond in Redding</li> </ul>	<ul style="list-style-type: none"> <li>Yes – wetland complex around Umpawaug Pond</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conduct botanical field survey along shore of Umpawaug Pond (August-early September) to record and map locations of species if present</li> <li>➤ If present, coordinate with CTDEEP about impact avoidance and minimization steps</li> </ul>
Tuckerman's sedge (perennial sedge)	<i>Carex tuckermanii</i>	SC	Deciduous swamps, shores of streams and ponds, wet meadows	<ul style="list-style-type: none"> <li>Alt D/Curve 1a Brookfield</li> </ul>	<ul style="list-style-type: none"> <li>Yes – vicinity has remnant oxbows of Still River</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid impacts to the known locations of these plants when possible; coordinate with CTDEEP about the need for further surveys</li> </ul>
Bush's sedge (perennial sedge)	<i>Carex bushii</i>	SC	Upland grasslands, forest margins	<ul style="list-style-type: none"> <li>Alt D/Brookfield Station &amp; Siding</li> </ul>	<ul style="list-style-type: none"> <li>Yes – location of Siding includes grasslands, forest margins</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid impacts to the known locations of these plants when possible; coordinate with CTDEEP about the need for further surveys</li> </ul>

Common Name (Description)	Scientific Name	Listing Status	Preferred Habitat	Project Sites within Area of Potential Effect of NDDB Record	Suitable Habitat Observed at Project Site?	CTDEEP Avoidance and Mitigation Recommendations
<b>ANIMALS</b>						
Northern Metalmark (butterfly)	<i>Calephelis borealis</i>	E	Open woodlands and glades on limestone soils when associated with <i>Senecio obovatus</i> (round-leaved ragwort)	<ul style="list-style-type: none"> <li>• Alt C/Curve 16A in Redding</li> <li>• Alt C/Curve 16B in Redding (only 1' shift)</li> <li>• Alt C/Bridge over Umpawaug Pond Brook in Redding</li> <li>• Alt C/Curve 19A in Bethel (next to pond)</li> <li>• Alt C/Bridge over Grassy Plains Rd in Bethel</li> </ul>	<ul style="list-style-type: none"> <li>• Yes – mixed forest</li> <li>• No – curve is only 1' shift (within ballast)</li> <li>• Yes – if bridge work goes beyond existing disturbed ROW</li> <li>• No (trees/shrubs in industrial area)</li> <li>• Yes – if bridge work goes beyond existing disturbed ROW</li> </ul>	➤ Avoid known areas of concern -- cordon off these areas prior/during construction to protect them; coordinate with CTDEEP about the need for surveys of host plants and butterfly
Harris' checkerspot (butterfly)	<i>Chlosyne harrisii</i>	SC	Wetlands, moist edges, pastures, meadows; host plant white aster ( <i>Aster umbellatus</i> )	<ul style="list-style-type: none"> <li>• Alt C/Curves 13D (1' shift) &amp; 14A in Redding</li> <li>• Alt C/Curves 14B,C,D (incl. Bridge over Simpaug Turnpike) &amp; 15A (2' shift) in Redding</li> <li>• Alt C/Curves 15B &amp; 15C in Redding</li> </ul>	<ul style="list-style-type: none"> <li>• No (deciduous upland forest)</li> <li>• Yes – Curve 14C is along a small watercourse</li> <li>• Yes – wetland complex around Umpawaug Pond</li> </ul>	➤ Conduct field survey of project site(s) to record and map locations of species if present; surveys may include host plants and butterfly

Common Name (Description)	Scientific Name	Listing Status	Preferred Habitat	Project Sites within Area of Potential Effect of NDDB Record	Suitable Habitat Observed at Project Site?	CTDEEP Avoidance and Mitigation Recommendations
Appalachian blue (butterfly)	<i>Celastrina neglectamajor</i>	T	Moist woodland edges; riparian hardwood forest or mixed forest with black cohosh (plants)	<ul style="list-style-type: none"> <li>Alt C/Curves 13D (1' shift) &amp; 14A in Redding</li> <li>Alt C/Curves 14B,C,D (incl Bridge over Simpaug Turnpike) &amp; 15A (2' shift) in Redding</li> <li>Alt C/Curves 15B &amp; 15C in Redding (Umpawaug Pond, wetlands)</li> <li>Alt C/Curve 16A in Redding</li> <li>Alt C/Curve 16B in Redding (1' shift)</li> <li>Alt C/Bridge over Umpawaug Pond Brook in Redding</li> </ul>	<ul style="list-style-type: none"> <li>Yes – Curve 14A has mixed forest</li> <li>Yes – Curves 14B, C, D have mixed hardwood forests</li> <li>Yes – moist and mixed forests around Umpawaug Pond</li> <li>Yes – mixed forests</li> <li>No – curve is only 1' shift (within ballast)</li> <li>Yes – if bridge work goes beyond existing disturbed ROW</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conduct field survey of project site(s) to record and map locations of species if present; surveys may include host plants and butterfly</li> </ul>
Sedge skipper (butterfly)	<i>Euphyes dion</i>	T	Open sunny marshes, wet fields, meadows, pond edges, swamps, fens, and floodplain wetlands	<ul style="list-style-type: none"> <li>Alt C/Curves 13D (1' shift) &amp; 14A in Redding</li> <li>Alt C/Curves 14B,C,D (incl. Bridge over Simpaug Turnpike) &amp; 15A (2' shift) in Redding</li> <li>Alt C/Curves 15B &amp; 15C in Redding</li> </ul>	<ul style="list-style-type: none"> <li>No (deciduous upland forest)</li> <li>Yes – Curve 14C is along a small watercourse</li> <li>Yes – wetland complex around Umpawaug Pond</li> </ul>	<ul style="list-style-type: none"> <li>➤ If favored habitats present at project sites, conduct field survey of project site(s) to record and map locations of species if present</li> </ul>

Common Name (Description)	Scientific Name	Listing Status	Preferred Habitat	Project Sites within Area of Potential Effect of NDDDB Record	Suitable Habitat Observed at Project Site?	CTDEEP Avoidance and Mitigation Recommendations
Bronze Copper (butterfly)	<i>Lycaena hyllus</i>	SC	Fens, wet meadows, pastures, watercourse edges	<ul style="list-style-type: none"> <li>Alt C/Curves 13D (1' shift) &amp; 14A in Redding</li> <li>Alt C/Curves 14B,C,D (incl. Bridge over Simpaug Turnpike) &amp; 15A (2' shift) in Redding</li> <li>Alt C/Curves 15B &amp; 15C in Redding</li> </ul>	<ul style="list-style-type: none"> <li>No (deciduous upland forest)</li> <li>Yes – Curve 14C is along a small watercourse</li> <li>Yes – wetland complex around Umpawaug Pond</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conduct field survey of project site(s) to record and map locations of species if present</li> </ul>
Newman's brocade (moth)	<i>Meropleon ambifuscum</i>	SC	Wetlands and calcareous fens	<ul style="list-style-type: none"> <li>Alt C/Curves 13D (1' shift) &amp; 14A in Redding</li> <li>Alt C/Curves 14B,C,D (incl. Bridge over Simpaug Turnpike) &amp; 15A (2' shift) in Redding</li> <li>Alt C/Curves 15B &amp; 15C in Redding</li> </ul>	<ul style="list-style-type: none"> <li>No (deciduous upland forest)</li> <li>Yes – Curve 14C is along a small watercourse</li> <li>Yes – wetland complex around Umpawaug Pond</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conduct field survey of project site(s) to record and map locations of species if present</li> </ul>
Unnamed ground beetle (insect)	<i>Badister transverse</i>	SC	Wetlands	<ul style="list-style-type: none"> <li>Alt C/Curves 13D (1' shift) &amp; 14A in Redding</li> <li>Alt C/Curves 14B,C,D (incl. Bridge over Simpaug Turnpike) &amp; 15A (2' shift) in Redding</li> <li>Alt C/Curves 15B &amp; 15C in Redding</li> </ul>	<ul style="list-style-type: none"> <li>No (deciduous upland forest)</li> <li>Yes – Curve 14C is along a small watercourse</li> <li>Yes – wetland complex around Umpawaug Pond</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conduct field survey of project site(s) to record and map locations of species if present</li> </ul>

Common Name (Description)	Scientific Name	Listing Status	Preferred Habitat	Project Sites within Area of Potential Effect of NDDB Record	Suitable Habitat Observed at Project Site?	CTDEEP Avoidance and Mitigation Recommendations
Unnamed ground beetle (insect)	<i>Bembidion pseudocautum</i>	SC	Wetlands	<ul style="list-style-type: none"> <li>Alt C/Curves 13D (1' shift) &amp; 14A in Redding</li> <li>Alt C/Curves 14B,C,D (incl. Bridge over Simpaug Turnpike) &amp; 15A (2' shift) in Redding</li> <li>Alt C/Curves 15B &amp; 15C in Redding</li> </ul>	<ul style="list-style-type: none"> <li>No (deciduous upland forest)</li> <li>Yes – Curve 14C is along a small watercourse</li> <li>Yes – wetland complex around Umpawaug Pond</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conduct field survey of project site(s) to record and map locations of species if present</li> </ul>
Unnamed ground beetle (insect)	<i>Bembidion semicinctum</i>	SC		<ul style="list-style-type: none"> <li>Alt C &amp; E -- No project work proposed outside existing disturbed rail ROW in vicinity of record (Wilton)</li> </ul>	<ul style="list-style-type: none"> <li>No (work proposed within disturbed rail ROW)</li> </ul>	Not applicable
Unnamed ground beetle (insect)	<i>Bembidion lacunarium</i>	SC		<ul style="list-style-type: none"> <li>Alt C/Curve 7E</li> <li>Alt C/Curve 8 (1' shift)</li> <li>Alt C/Rt 7 Bridge (over rail) Replacement in Wilton</li> </ul>	<ul style="list-style-type: none"> <li>Yes – curve affects soils with vegetation (shrubs)</li> <li>No – curve is only 1' shift (within ballast)</li> <li>Yes – if bridge work goes beyond existing disturbed ROW</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conduct field survey of project site(s) to record and map locations of species if present</li> </ul>



Common Name (Description)	Scientific Name	Listing Status	Preferred Habitat	Project Sites within Area of Potential Effect of NDDB Record	Suitable Habitat Observed at Project Site?	CTDEEP Avoidance and Mitigation Recommendations
Unnamed lymnaeid snail (gill-breathing pond snail)	<i>Fossaria rustica</i>	SC	Shallow water < 3 feet deep	<ul style="list-style-type: none"> <li>Alt C/Curves 13D (1' shift) &amp; 14A in Redding</li> <li>Alt C/Curves 14B,C,D (incl. Bridge over Simpaug Turnpike) &amp; 15A (2' shift) in Redding</li> <li>Alt C/Curves 15B &amp; 15C in Redding</li> <li>Alt C/Bridge over Umpawaug Pond Brook</li> <li>Alt C/Curve 16A in Redding</li> <li>Alt C/Curve 16B (1' shift) in Redding</li> </ul>	<ul style="list-style-type: none"> <li>No (curves not located in water)</li> <li>Yes – Curve 14C may affect a small watercourse</li> <li>Yes –Umpawaug Pond</li> <li>Yes – if bridge work encroaches on brook</li> <li>Yes – small stream</li> <li>No (Curve 16B is only 1' shift; work occurs on ballast)</li> </ul>	<ul style="list-style-type: none"> <li>➤ If shallow waters will be manipulated by project, conduct field survey of project site(s) to record and map locations of species if present</li> </ul>
Whiteriver crayfish (aquatic invertebrate)	<i>Procambarus acutus</i>	SC	Primarily slow-moving waters	<ul style="list-style-type: none"> <li>Alt C - No project activities proposed in water in vicinity of record; projects adjacent to water include the Curve 7E, Curve 8 (1' shift), and Route 7 Bridge (over rail) Replacement in Wilton</li> </ul>	<ul style="list-style-type: none"> <li>No (proposed project sites are not located in water)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Minimize potential sedimentation effects of work on adjacent waters</li> <li>➤ Coordinate with CTDEEP about the need for field survey given the non-aquatic project sites</li> </ul>

Common Name (Description)	Scientific Name	Listing Status	Preferred Habitat	Project Sites within Area of Potential Effect of NDDB Record	Suitable Habitat Observed at Project Site?	CTDEEP Avoidance and Mitigation Recommendations
Northern slimy salamander (amphibian)	<i>Plethodon glutinosus</i>	T	Rotting logs and leaf litter on steep, moist, rocky slopes in dense-canopy hardwood forests	<ul style="list-style-type: none"> <li>Alt D/Brookfield Station &amp; Siding</li> <li>Alt D/Old Middle Rd Bridge Replacement in New Milford</li> <li>Alt D/Curve 6A in New Milford (unlikely habitat; shrub-sapling regrowth)</li> <li>Alt D/Old Pumpkin Hill Rd Bridge Raising in New Milford</li> </ul>	<ul style="list-style-type: none"> <li>Yes – Station site on banks of Still River</li> <li>No – lack of steep rocky slopes in vicinity of work</li> <li>No (shrub-sapling regrowth area)</li> <li>No – lack of steep rocky slopes in vicinity of work</li> </ul>	<ul style="list-style-type: none"> <li>➤ Protect mature, second growth deciduous and hemlock forests</li> <li>➤ If work occurs in summer or fall in areas of known populations, install silt fencing around work area prior to construction; remove after construction; coordinate with CTDEEP about the need for surveys</li> <li>➤ Avoid habitat during construction</li> </ul>
Eastern box turtle (terrestrial turtle; semiaquatic young)	<i>Terrapene carolina</i>	SC	Old field and deciduous forests; powerlines; logged areas; near streams and small ponds	<ul style="list-style-type: none"> <li>Alt D/Brookfield Station &amp; Siding</li> </ul>	<ul style="list-style-type: none"> <li>Yes – Station &amp; Siding sites contain mix of field and forests, powerlines, and are next to the Still River</li> </ul>	<ul style="list-style-type: none"> <li>➤ Minimize impacts to this species' habitats</li> <li>➤ If work occurs in summer or fall near known populations, install silt fencing around work area prior to construction and remove after construction; coordinate with CTDEEP about the need for surveys</li> <li>➤ Avoid habitat during construction</li> </ul>

Common Name (Description)	Scientific Name	Listing Status	Preferred Habitat	Project Sites within Area of Potential Effect of NDDB Record	Suitable Habitat Observed at Project Site?	CTDEEP Avoidance and Mitigation Recommendations
Wood turtle (aquatic and terrestrial turtle)	<i>Glyptemys insculpta</i>	SC	Streams and rivers next to floodplains, woodlands, or meadows (may include powerlines and rail lines)	<ul style="list-style-type: none"> <li>• Alt D/Brookfield Station</li> </ul>	<ul style="list-style-type: none"> <li>• Yes – west edge of Station site adjoins floodplains next to the Still River</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conserve riparian habitat; maintain at least 100-foot buffer strip of natural vegetation along banks of streams and rivers</li> <li>➤ If work occurs in summer or fall near known populations, install silt fencing around work area prior to construction and remove after construction; coordinate with CTDEEP about the need for surveys</li> <li>➤ Avoid habitat during construction</li> </ul>

Common Name (Description)	Scientific Name	Listing Status	Preferred Habitat	Project Sites within Area of Potential Effect of NDDB Record	Suitable Habitat Observed at Project Site?	CTDEEP Avoidance and Mitigation Recommendations
Eastern hognose snake (upland snake)	<i>Heterodon platirhinos</i>	SC	Dry sandy areas with well-drained gravelly soils	<ul style="list-style-type: none"> <li>Alt D/Brookfield Station &amp; Siding</li> </ul>	<ul style="list-style-type: none"> <li>Yes – location of Station is on well drained gravelly soils (Hinckley soils)</li> </ul>	<ul style="list-style-type: none"> <li>➤ If favored habitats present at project sites, conduct field survey of project site(s) to record and map locations of species if present</li> <li>➤ If work occurs in summer or fall near identified populations, install silt fencing around work area prior to construction and remove after construction</li> <li>➤ Avoid habitat during construction</li> </ul>
Sharp-shinned hawk (raptor)	<i>Accipiter striatus</i>	E	Nests on large evergreens; seasonal resident (March-Sept)	<ul style="list-style-type: none"> <li>Alt D/Erickson Road Bridge Raising in New Milford</li> <li>Alt D/Curve 9A in New Milford (1' shift)</li> </ul>	<ul style="list-style-type: none"> <li>Yes – if bridge work goes beyond existing disturbed ROW</li> <li>No – curve is only 1' shift (within ballast)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Maintain large blocks of forested habitat to provide suitable nesting areas</li> </ul>
Peregrine falcon (raptor)	<i>Falco peregrines</i>	T	Tall buildings in urban areas for nest sites (in CT)	<ul style="list-style-type: none"> <li>Alt C &amp; E catenary installation and removal (in Norwalk vicinity of MP 1.8- MP 2.5)</li> </ul>	<ul style="list-style-type: none"> <li>No (installations proposed within rail ROW)</li> </ul>	<ul style="list-style-type: none"> <li>➤ If peregrine falcons are nesting close to rail line, catenary work should be conducted during non-nesting season (June-March)</li> </ul>

Common Name (Description)	Scientific Name	Listing Status	Preferred Habitat	Project Sites within Area of Potential Effect of NDDB Record	Suitable Habitat Observed at Project Site?	CTDEEP Avoidance and Mitigation Recommendations
Purple martin (swallow)	<i>Progne subis</i>	T	Open grassy areas and forest openings near streams, rivers, lakes, ponds, and marshes	<ul style="list-style-type: none"> <li>Alt D/Old Middle Rd Bridge Replacement in New Milford</li> <li>Alt D/Curve 6A in New Milford</li> <li>Alt D/Old Pumpkin Hill Rd Bridge Raising in New Milford</li> </ul>	<ul style="list-style-type: none"> <li>No (adjacent forest cover)</li> <li>No (shrub-sapling vegetation)</li> <li>Yes – mix of open fields and forest with small watercourse and near Still River</li> </ul>	<ul style="list-style-type: none"> <li>➤ If purple martins are nesting on site, work should be conducted August-March to avoid nesting season; coordinate with CTDEEP about the need for surveys</li> <li>➤ Retain buffer zone around colony</li> </ul>

\*Listing Status: E = Endangered; T = Threatened; SC = Special Concern

Sources: Potentially affected species and general locations based on correspondence from CT DEEP (2011); nomenclature and preferred habitat from CT DEEP, USDA, efloras.org, and Newcomb (1977)

It is important to note the following relative to this impact assessment:

- For any improvement site with T&E species concerns, further coordination with DEEP will be necessary if the improvement is selected to go forward, even if suitable habitats were not observed and impacts were assessed to be unlikely in this Tech Memo. Further coordination will confirm and clarify impacts (or lack of impacts), determine the detailed scope of any required surveys, establish protection measures to be taken during construction, and identify particular mitigation measures. These coordination steps will be integral to further design and permitting of the improvements.
- Since this impact assessment was based on conceptual design, many details of construction, such as the locations of equipment staging and material stockpiles, have not yet been identified. To the extent possible, construction activities for any Danbury Branch Improvements will be located and designed so as to avoid and minimize impacts on T&E species, wetlands, 100-year floodplains, floodways, sensitive cultural resources, and other regulated areas.
- For the butterfly species that are often associated with favored plants or host plants, surveys may be required for the plant populations as well as for the butterfly populations.

#### **Alternative A - No Build**

Impacts to T&E species are not expected from the No Build Alternative, as no new construction would take place as part of this alternative.

#### **Alternative B - Transportation System Management (TSM)**

The TSM Alternative would not directly or indirectly impact T&E species, as no new construction would take place as part of this alternative.

#### **Alternative C - South Norwalk to Danbury Improvements**

Alternative C would provide infrastructure and service improvements between South Norwalk and Danbury on the existing Branch. Improvements would include upgrading track to 60 mile per hour maximum speed; expanding parking and improving access at stations; upgrading 15 bridges from an older open deck structure to modern ballast deck bridges; upgrading the rail yard and providing a new maintenance facility at Danbury Yard; and electrifying the rail line. New rolling stock would be added to allow for expanded service or for the electric trains.

##### *Passenger Stations (Existing Stations)*

Under this alternative, improvements are planned at five (5) of the existing stations located along the Danbury Branch rail corridor: Merritt 7 (Norwalk); Cannondale (Wilton); Branchville (Ridgefield); Redding; and Bethel. None of these station sites are

encircled by or adjacent to NDDDB records. No direct or indirect impacts to T&E species and/or their habitats are anticipated from these improvements.

### *Structures and Bridges*

There are improvements involving undergrade and overhead bridges included with Alternative C.

**Undergrade (UG) bridges (railroad goes over a road or stream):** There are 18 UG bridges where work is planned in Alternative C. Three of these are located within NDDDB records:

- **Bridge over Simpaug Turnpike in Redding at MP 14.8:** this bridge is located within NDDDB #5. The need for this bridge replacement is triggered by the Curve 14D track reconfiguration and the impacts from bridge construction cannot be clearly isolated from the curve. Therefore, the potential impacts from this bridge are included in the discussion of Curve 14D in the below section on *Track Reconfigurations, Sidings and Connections*.
- **Bridge over Umpawaug Pond Brook in Redding at MP 16.4:** This replacement bridge on the existing rail alignment is located within NDDDB #7. There are two listed species in proximity to this location:

	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Preferred Habitat</b>
1	Northern Metalmark (butterfly)	<i>Calephelis borealis</i>	E	Open woodlands and glades on limestone soils when associated with <i>Senecio obovatus</i> (round-leaved ragwort)
2	Appalachian blue (butterfly)	<i>Celastrina neglectamajor</i>	T	Moist woodland edges; riparian hardwood forest or mixed forest with black cohosh (plants)

Areas beyond the previously disturbed rail ROWs around this bridge include habitats which may be important for these butterflies.

The replacement bridge, based on conceptual design, is a single-span bridge with no piers in the water. Construction is anticipated to be of a non-intrusive nature: the proposed construction methodology for this bridge replacement on existing alignment, based on conceptual design, is to use the existing bridges' support structures (e.g., abutments). Under this scenario, the existing bridge deck would be removed and the new bridge deck would be lifted into place onto the existing abutments. Construction is anticipated to occur from the existing disturbed and maintained rail and roadway rights-of-way (ROWs). Appropriate erosion and sedimentation (E&S) controls would be maintained during construction to prevent disruption beyond the existing disturbed ROWs. Under this non-intrusive scenario, impacts to adjacent natural

habitats would not be anticipated and direct or indirect impacts on the butterfly species would not be anticipated.

If the bridge abutments will need major repairs or replacement, however, as determined by future engineering and hydraulic studies, or if areas beyond the existing disturbed ROW (not currently anticipated) are required for some aspect of construction, there could be soils/rock excavation and equipment on lands around the bridge structures. In this case, direct and indirect impacts to preferred habitat for the two butterfly species are possible.

Further coordination with DEEP relative to the specific locations of known habitats and further survey requirements will be needed at this location and the following DEEP recommendations would apply:

- Northern Metalmark: cordon off known habitats to ensure that construction equipment does not encroach upon them and coordinate with DEEP regarding the need for further surveys
  - Appalachian Blue: prior to initiation of construction, conduct a field survey of the project site to record the presence/absence of the species, to map its extent, and to identify measures for protection.
- **Bridge over Grassy Plains Road in Bethel at MP 19.64:** This bridge is located within NDDB #9 and is a bridge replacement on the existing rail alignment. There is one state-listed species in proximity to this site:

	Common Name	Scientific Name	Status	Preferred Habitat
1	Northern Metalmark (butterfly)	<i>Calephelis borealis</i>	E	Open woodlands and glades on limestone soils when associated with <i>Senecio obovatus</i> (round-leaved ragwort)

Areas beyond the previously disturbed rail and roadway ROWs of this bridge include habitats which may be important for this butterfly species.

The proposed construction methodology for this bridge replacement on existing alignment is the same non-intrusive method as described above for the bridge over Umpawaug Pond Brook. Under this scenario, the existing bridge deck would be removed and the new bridge deck would be lifted into place onto the existing abutments, with construction occurring from the existing disturbed and maintained rail and roadway rights-of-way (ROWs). Given this scenario, this bridge replacement is not anticipated to have direct or indirect impacts on the Northern Metalmark or its habitat. However, the DEEP recommends cordoning off known habitats supporting the host plants to ensure that construction equipment does not encroach upon them. Coordination with DEEP relative to the specific locations of known habitats and the possible need for further surveys will be necessary at this location.



If the bridge abutments will need major repairs or replacement, as determined by future engineering and hydraulic studies, or if areas beyond the existing disturbed ROW (not currently anticipated) are required for some aspect of construction, direct and indirect impacts to preferred habitat for the two butterfly species are possible. If these more intrusive construction measures are needed, additional measures may be necessary, as determined by further coordination with DEEP.

**Overhead (OH) bridges (railroad goes under a road or in a tunnel):** There is one OH bridge replacement in Alternative C within an NDDB record.

- **Route 7 Bridge in Wilton at MP 7.87:** This roadway bridge over the tracks is located within NDDB record #2. There is one listed species near this site:

	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Preferred Habitat</b>
1	Unnamed ground beetle (insect)	<i>Bembidion lacunarium</i>	SC	Not specified

At this site, the existing bridge would be replaced by a slightly longer bridge to accommodate the track's slight shift in alignment (4-8 feet to the west) for Curve 7E. The finished bridge would be a two-lane roadway bridge of the same width as the existing bridge. However, the northern bridge abutment requires reconstruction to accommodate Curve 7E, so there would be ground disturbance in the vicinity of this abutment on the northwest side. The conceptual footprint of the abutment lies within previously disturbed slopes and embankments around the roadway and construction and staging areas would be located to the extent possible on previously disturbed rail and roadway ROWs adjacent to Route 7. However, if construction activities extend beyond these previously disturbed lands, there could be direct impacts to the ground beetle. In that event, the DEEP recommends that prior to initiation of construction, a field survey be conducted of the project site to record the presence/absence of the species, to map its extent, and to identify measures for protection.

#### *Traction Power System - Electrification*

Facilities associated with the Traction Power System for Alternative C would extend from approximately MP 1.1 in Norwalk to MP 23.9 in Danbury. Electrification facilities include: substations at Norwalk, Wilton, Ridgefield, and Danbury; smaller remote terminal units (RTUs) in Norwalk and Bethel; and catenary and support structures. None of the substations or RTUs is located within NDDB records, so none of them would impact T&E species or their habitats. Some catenary structures would be located within NDDB records.

**Catenary and support structures:** Construction methodology for the installation of catenary poles assumes that all work by machinery would be conducted from the

rail ROW (i.e., by track-mounted equipment), with minor hand-work around each foundation to remove spoils and restore the ground to former conditions. Over the length of this alternative, approximately 171 catenary poles would fall within NDDDB records #1, 2, 4, 5, 6, 7, 8, and 9.

The catenary structures would be installed in railroad ballast/gravel and may also occur within the edges of vegetated habitats, where these habitats abut and/or encroach upon the disturbed rail ROW. The Alternative C track passes next to urban and suburban residential lands, cleared industrial properties, upland forest, forested wetlands, and open water ponds. At this conceptual stage of project design, the specific locations of individual poles requiring placement beyond the existing disturbed ROW are not known. While the potential impacts to T&E species habitat from the catenary installation are anticipated to be minor because the installations are located either within railroad ballast or along previously disturbed edges where habitat integrity is often disrupted, further coordination with the CTDEEP relative to state-listed species habitats will be conducted during the layout of pole locations in order to avoid and/or minimize impacts.

#### *Track Reconfigurations, Sidings and Connections*

There are many track reconfigurations proposed under Alternative C to improve rail operations and/or speed; these involve realigning one or more curves within a segment of track. There are approximately 23 curve reconfigurations plus a new branch connection with the New Haven mainline in South Norwalk, designated as CP241. Note that a reconfiguration sometimes consists of several curve shifts. In cases where two or more curves are lumped together as one reconfiguration, it means that the curves are interdependent in their construction (one curve would not be constructed without the others in the group). There are no passing or storage sidings proposed by Alternative C.

**Track curve reconfigurations:** There are seven curve reconfigurations located wholly or partially within NDDDB records. If a proposed realignment is a one foot (1') or two feet (2') shift from the existing center line of the tracks, no changes to the existing rail bed are expected and therefore no impacts to T&E species or their habitats are anticipated. Where realignments involve a shift of three feet or greater, the track ballast and embankments would likely be extended or reconstructed to support the new alignment. In these cases, permanent impacts would occur outside the existing disturbed rail bed due to placement of fill (or cut) for the realigned (shifted or new) rail bed; impacts to T&E species were deemed possible at these track reconfigurations.

Six track reconfigurations, many comprised of two or more curves, were identified as potential concerns for T&E species, listed below:

- **Curves 7E and 8:** Curve 7E and 8 fall within NDDDB #2. Curve 8 is offset from existing track by only 1' but Curve 7E is offset up to 8' west from the existing track centerline and may therefore require work outside the existing

disturbed ROW. (Note: Curve 7E is associated with the overhead Route 7 Bridge replacement at MP 7.87.) There are two listed species near this site:

	Common Name	Scientific Name	Status	Preferred Habitat
1	Unnamed ground beetle (insect)	<i>Bembidion lacunarium</i>	SC	Not specified
2	Whiteriver crayfish (aquatic invertebrate)	<i>Procambarus acutus</i>	SC	Primarily slow-moving waters

Curve 7E shifts the track toward the abutments of the overhead Route 7 roadway bridge and toward the back yards of residential and commercial properties fronting on Route 7. The area is characterized by disturbed soils with a mix of upland deciduous trees and shrubs. There is also a linear trackside wetland along the tracks which would be impacted by this curve. Given the possibility of direct impacts to terrestrial habitats outside the existing disturbed ROW, where the ground beetle may occur, the DEEP recommends that prior to initiation of construction, a field survey be conducted of the project site to record the presence/absence of the species, to map its extent, and to identify measures for protection. No impacts to the whiteriver crayfish are anticipated, as there are no waterways or surface waters within the anticipated construction area.

- **Curve 14A:** This curve is located within NDDB #4. There are eight listed species near this project site:

	Common Name	Scientific Name	Status	Preferred Habitat
1	Harris' checkerspot (butterfly)	<i>Chlosyne harrisii</i>	SC	Wetlands, moist edges, pastures, meadows; host plant white aster ( <i>Aster umbellatus</i> )
2	Appalachian blue (butterfly)	<i>Celastrina neglectamajor</i>	T	Moist woodland edges; riparian hardwood forest or mixed forest with black cohosh (plants)
3	Sedge skipper (butterfly)	<i>Euphyes dion</i>	T	Open sunny marshes, wet fields, meadows, pond edges, swamps, fens, and floodplain wetlands
4	Bronze Copper (butterfly)	<i>Lycaena hyllus</i>	SC	Fens, wet meadows, pastures, watercourse edges
5	Newman's brocade (moth)	<i>Meropleon ambifuscum</i>	SC	Wetlands and calcareous fens
6	Unnamed ground beetle (insect)	<i>Badister transverse</i>	SC	Wetlands
7	Unnamed ground beetle (insect)	<i>Bembidion pseudocautum</i>	SC	Wetlands
8	Unnamed lymnaeid snail (gill-breathing pond snail)	<i>Fossaria rustica</i>	SC	Shallow water < 3 feet deep

This curve would shift the track up to 13 feet to the east of the current track centerline. The reconfiguration involves cutting into the toe of a slope which supports deciduous upland forest. A retaining wall is proposed to minimize

the required excavation. There are several houses within 300 feet to the east of this improvement, within the forested setting. Upland forest flanks the other (west) side of the tracks as well (not to be physically affected), with several houses and cleared grassy yards within 300 feet. Given the direct impacts on deciduous (hardwood) forest at this site, there are potential impacts on habitat of the Appalachian blue butterfly. Based on the DEEP recommendations for invertebrates, prior to initiation of construction, a field survey would need to be conducted of the project site to record the presence/absence of the species, to map its extent, and to identify measures for protection. The other seven species noted near this site are associated with wetlands, shallow water, pastures, and meadows. Those habitats were not observed at the Curve 7E project site and are not anticipated to be impacted, so impacts to those species are not anticipated at this site.

- **Curves 14B, 14C, 14D & 15A:** This interdependent series of curves (to be constructed as one realignment) is located within NDDB #5. Curve 15A is proposed as a 2' track shift but the other curves would require construction beyond the existing rail bed and were evaluated for T&E species impacts. There are eight listed species near this project site:

	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Preferred Habitat</b>
1	Harris' checkerspot (butterfly)	<i>Chlosyne harrisii</i>	SC	Wetlands, moist edges, pastures, meadows; host plant white aster ( <i>Aster umbellatus</i> )
2	Appalachian blue (butterfly)	<i>Celastrina neglectamajor</i>	T	Moist woodland edges; riparian hardwood forest or mixed forest with black cohosh (plants)
3	Sedge skipper (butterfly)	<i>Euphyes dion</i>	T	Open sunny marshes, wet fields, meadows, pond edges, swamps, fens, and floodplain wetlands
4	Bronze Copper (butterfly)	<i>Lycaena hyllus</i>	SC	Fens, wet meadows, pastures, watercourse edges
5	Newman's brocade (moth)	<i>Meropleon ambifuscum</i>	SC	Wetlands and calcareous fens
6	Unnamed ground beetle (insect)	<i>Badister transverse</i>	SC	Wetlands
7	Unnamed ground beetle (insect)	<i>Bembidion pseudocautum</i>	SC	Wetlands
8	Unnamed lymnaeid snail (gill-breathing pond snail)	<i>Fossaria rustica</i>	SC	Shallow water < 3 feet deep

Curve 14 B would shift the track west of its current location by up to 13 feet. This reconfiguration would involve cutting into the base of a slope which supports upland deciduous forest. Sparse residential uses are located at distances of over 500 feet within the wooded slope. On the other side of the tracks (not physically affected) are a forested wetland and a linear trackside wetland. Given the direct impacts on deciduous (hardwood) forest at this site, there are potential impacts on habitat of the Appalachian blue butterfly.

Based on the DEEP recommendations for invertebrates, prior to initiation of construction, a field survey would need to be conducted of the project site to record the presence/absence of the species, to map its extent, and to identify measures for protection. The other seven species noted near this site are associated with wetlands, shallow water, pastures, and meadows. Those habitats were not observed within the Curve 14B disturbance area and those species are not anticipated to be impacted.

Farther north, Curve 14C would shift the track up to 36 feet west of its current location. This requires fill (and a retaining wall) within a narrow upland forested strip that currently exists between the rail bed and a long parallel residential driveway. The construction would remove this approximately 30-foot wide strip of trees. Along the west side of the driveway are three large rectangular cleared fields/yards associated with the houses and a few clumps or rows of deciduous trees. There is a small watercourse that runs between two of the fields and crosses under the tracks within the length of this curve, such that the curve reconfiguration may require a culvert modification. A very short linear trackside wetland would be impacted by this curve; there are no other mapped wetlands in close proximity. The direct habitat impacts on deciduous forest, moist edges, fields (pasture), and shallow water (watercourse) indicate potential effects on all eight of the species noted for this curve series, all of which are invertebrates. Based on the DEEP recommendations for invertebrates, prior to initiation of construction, a field survey would need to be conducted of the project site to record the presence/absence of the species, to map their extent, and to identify measures for protection.

Curve 14D would shift the track up to 14 feet east of the existing track and includes replacement of the rail bridge over Simpaug Turnpike. The construction of this curve would remove a strip of upland forest along the tracks, adjacent to the back yards of two or three houses, which are within 50-100 feet of the tracks. There are no wetland impacts associated with this curve reconstruction. Given the direct impacts on deciduous (hardwood) forest at this site, there are potential impacts on habitat of the Appalachian blue butterfly. Based on the DEEP recommendations for invertebrates, prior to initiation of construction, a field survey would need to be conducted of the project site to record the presence/absence of the species, to map its extent, and to identify measures for protection.

- **Curves 15B and 15C:** This series of curves is located within NDDB #6. There are eight listed species near this project site:

	Common Name	Scientific Name	Status	Preferred Habitat
1	Harris' checkerspot (butterfly)	<i>Chlosyne harrisii</i>	SC	Wetlands, moist edges, pastures, meadows; host plant white aster ( <i>Aster umbellatus</i> )
2	Appalachian blue (butterfly)	<i>Celastrina neglectamajor</i>	T	Moist woodland edges; riparian hardwood forest or mixed forest with black cohosh (plants)
3	Sedge skipper (butterfly)	<i>Euphyes dion</i>	T	Open sunny marshes, wet fields, meadows, pond edges, swamps, fens, and floodplain wetlands
4	Bronze Copper (butterfly)	<i>Lycaena hyllus</i>	SC	Fens, wet meadows, pastures, watercourse edges
5	Newman's brocade (moth)	<i>Meropleon ambifuscum</i>	SC	Wetlands and calcareous fens
6	Unnamed ground beetle (insect)	<i>Badister transverse</i>	SC	Wetlands
7	Unnamed ground beetle (insect)	<i>Bembidion pseudocautum</i>	SC	Wetlands
8	Unnamed lymnaeid snail (gill-breathing pond snail)	<i>Fossaria rustica</i>	SC	Shallow water < 3 feet deep

Curve 15B would shift the track up to 14 feet west of the existing rail center line. The impacted strip of land contains upland deciduous forest. This strip separates the track from the cleared yards of two residences which front on Simpaug Turnpike; the houses are located 80-100 feet from the existing track within a patchwork of forest. Given the direct impacts on deciduous (hardwood) forest at this site, there are potential impacts on habitat of the Appalachian blue butterfly. Based on the DEEP recommendations for invertebrates, prior to initiation of construction, a field survey would need to be conducted of the project site to record the presence/absence of the species, to map its extent, and to identify measures for protection.

Curve 15C would shift the track up to 23 feet east of its existing alignment. All of the impact zone of this reconfiguration consists of the open water and adjacent scrub-shrub wetlands of Umpawaug Pond. These wetlands have good quality wildlife habitat and fish and shellfish habitat. Impacts on these wetland habitats indicate potential impacts on the seven invertebrate species associated with wetlands and water; all species listed near this curve except for the Appalachian blue butterfly. Based on the DEEP recommendations for invertebrates, prior to initiation of construction, a field survey would need to be conducted of the project site to record the presence/absence of the species, to map their extent, and to identify measures for protection.

- **Curves 16A and 16B:** This series of curves is located within NDDB #7. Curve 16B shifts the track less than 1' but Curve 16A would be shifted up to 22 feet east of the current track centerline, moving it closer to the parallel Simpaug Turnpike. The impacted strip supports a mix of upland and wetland deciduous forest. There are three listed species near this site:

	Common Name	Scientific Name	Status	Preferred Habitat
1	Northern Metalmark (butterfly)	<i>Calephelis borealis</i>	E	Open woodlands and glades on limestone soils when associated with <i>Senecio obovatus</i> (round-leaved ragwort)
2	Appalachian blue (butterfly)	<i>Celastrina neglectamajor</i>	T	Moist woodland edges; riparian hardwood forest or mixed forest with black cohosh (plants)
3	Unnamed lymnaeid snail (gill-breathing pond snail)	<i>Fossaria rustica</i>	SC	Shallow water < 3 feet deep

Wetland mapping shows a wetland on both sides of the track in this location, associated with the flow of a small stream which crosses the tracks. Almost all of the land impacted by this curve reconfiguration consists of forested wetlands; therefore, of the three noted species, the Appalachian blue butterfly and the lymnaeid snail could be impacted. Based on the DEEP recommendations for invertebrates, prior to initiation of construction, a field survey would need to be conducted of the project site to record the presence/absence of the species, to map their extent, and to identify measures for protection.

- **Curve 19A:** This curve is located within NDDB #9 and has a proposed offset of up to 4 feet west of the existing rail alignment. There is one listed species near this project site:

	Common Name	Scientific Name	Status	Preferred Habitat
1	Northern Metalmark (butterfly)	<i>Calephelis borealis</i>	E	Open woodlands and glades on limestone soils when associated with <i>Senecio obovatus</i> (round-leaved ragwort)

The narrow strip of potentially impacted land is a light fringe of trees and shrubs at the rear of a highly disturbed industrial warehouse/storage yard (with frontage on Trowbridge Drive), opposite the north end of Sympaug Pond. There are linear trackside wetlands which may be impacted by this improvement in addition to the upland fringe of trees and shrubs. Given the lack of preferred habitat at this project site, impacts on the Northern Metalmark are not anticipated.

**Connections – additional branch connection at CP 241:** The branch connection at CP 241 is not located within an NDDB record; therefore no impacts to T&E species are expected from this connection.

**Alternative D - Extension from Danbury to New Milford**

Alternative D would extend existing Danbury Branch passenger service 14.7 miles from Danbury to New Milford. This includes replacing the existing freight track by

constructing new track along the same alignment to accommodate speeds up to 60 miles per hour, adding new stations and parking facilities at Danbury North, Brookfield and New Milford, and adding new rolling stock. A new maintenance facility and storage yard would also be built in the vicinity of New Milford.

*Rail Reconstruction*

Alternative D calls for reconstruction of the entire 14.7 miles of track from Danbury to New Milford. This work would provide a higher quality of rail on new ties in order to accommodate train speeds up to 60 miles per hour. This work would essentially replace the existing rail in place and therefore would not change track profiles or ground elevations. The track in most locations is centered within level ground stabilized by ballast and gravel. The replacement work would be done in short segments by rail-mounted equipment, take place in level areas of gravel and ballast fill, and would be stabilized as soon as the replacement section is in place. Therefore this work would have no direct or indirect effects on T&E species or their habitats. The construction of track curve reconfigurations, where the rail would be installed on slightly different alignments, is discussed in the section on *Track Reconfigurations, Sidings and Connections* below.

*Passenger Stations (New)*

Improvements from Danbury to New Milford under Alternative D would involve the construction of two new passenger stations: Brookfield and New Milford. Both new stations would involve the construction of passing sidings, 300-foot long high-level platforms with canopies, new passenger waiting shelters, and new surface parking lots with a capacity of approximately 100 vehicles. The New Milford Station and passing siding are not within an NDDB record; however, the Brookfield Station and siding are.

- **Brookfield Station and Siding:** This station and passing siding are located within NDDB # 15, which is a contiguous series of NDDB records along the Still River. Five listed species were noted by the DEEP in proximity to this site:

	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Preferred Habitat</b>
1	Bush's sedge (perennial sedge)	<i>Carex bushii</i>	SC	Upland grasslands, forest margins
2	Northern slimy salamander (amphibian)	<i>Plethodon glutinosus</i>	T	Rotting logs and leaf litter on steep, moist, rocky slopes in dense-canopy hardwood forests
3	Eastern box turtle (terrestrial turtle; semiaquatic young)	<i>Terrapene carolina</i>	SC	Old field and deciduous forests; powerlines; logged areas; near streams and small ponds
4	Wood turtle (aquatic and terrestrial turtle)	<i>Glyptemys insculpta</i>	SC	Streams and rivers next to floodplains, woodlands, or meadows (may include powerlines and rail lines)
5	Eastern hognose snake (upland snake)	<i>Heterodon platirhinos</i>	SC	Dry sandy areas with well-drained gravelly soils



The proposed parking lot, drop-off area, platforms, and other station elements occur partially on previously disturbed ground already used for parking and partially on undeveloped forested land. The forested land is a rectangular strip of approximately 1.2 acres on the west side of the tracks, extending northerly from the existing historic train station building and located between the tracks and a dirt driveway. The impacted forested area supports deciduous trees along the banks of the Still River, which lies at a distance of 25 to 100 feet from the conceptual footprint of the station development. The station development would also impact linear wetlands adjacent to the track; these wetlands have sparse emergent vegetation and were assessed to have very low ecological value. The impacted forested areas include preferred habitat for the northern slimy salamander and the wood turtle; these species could thus be impacted by loss of habitat and/or direct mortality. There would also be a loss of habitat connectivity along the river bank because the existing forested strip would be greatly reduced in width, diminishing its value for forage, cover, and wildlife movements.

Construction of the siding would occur on the east side of the tracks opposite the station development, between the powerlines and the existing track. This is a lightly wooded deciduous upland bordered by residential properties to the east of the powerlines; the impacted area is approximately 2 acres. The overall site is underlain by well drained soils. The area impacted by the siding includes preferred habitat for Bush's sedge, eastern box turtle, and the eastern hognose snake. These species could thus be impacted by loss of habitat and/or direct mortality. The new siding would increase the barriers against east-west wildlife movements for these wildlife species, in an area where movements have already been compromised.

To minimize harm on all of these potentially affected wildlife species, the DEEP recommends avoiding habitat areas. Further coordination with CTDEEP will be conducted to determine the need for further surveys. Furthermore, if construction is anticipated to occur during summer or fall, silt fencing should be installed around the work area prior to construction and removed upon completion. Further coordination with DEEP about protecting these species will be necessary for these sites.

The siding location is in the vicinity of known populations of Bush's sedge. The DEEP recommends avoiding the habitat of this plant during design and construction. Further coordination with the DEEP will be necessary prior to implementing this improvement to identify the locations of the plant (if already known by prior surveys), determine the need for additional surveys, and to establish protection measures.

### Structures and Bridges

There are six undergrade (UG) bridge replacements (on existing track alignments) proposed by Alternative D. Two of the bridges are within NDDDB records but only one location was identified by the DEEP as a concern relative to the proposed project work; this is described below. [All of the overhead bridge replacements are triggered by the electrification option and are reported as Bridge Raisings in the section on *Traction Power System – Electrification.*]

- **Bridge over Old Middle Road in Brookfield at MP 33.07:** This bridge is located within NDDDB #15. There are two listed species in proximity to this site:

	Common Name	Scientific Name	Status	Preferred Habitat
1	Northern slimy salamander (amphibian)	<i>Plethodon glutinosus</i>	T	Rotting logs and leaf litter on steep, moist, rocky slopes in dense-canopy hardwood forests
2	Purple martin (swallow)	<i>Progne subis</i>	T	Open grassy areas and forest openings near streams, rivers, lakes, ponds, and marshes

This bridge site is surrounded primarily by deciduous forest. This improvement is a replacement bridge on existing alignment. The proposed construction methodology for this bridge replacement on existing alignment, based on conceptual design, is to use the existing bridges' support structures (e.g., abutments). Under this scenario, the existing bridge deck would be removed and the new bridge deck would be lifted into place onto the existing abutments. Construction is anticipated to occur from the existing disturbed and maintained rail and roadway rights-of-way (ROWs). If the bridge abutments will need major repairs or replacement, however, as determined by future engineering studies, or if areas beyond the existing disturbed ROWs (not currently anticipated) are required for some aspect of construction, there could be clearing, soils/rock excavation and equipment on lands around the bridge structures. In this case, small areas of the surrounding deciduous forest could be cleared. However, the vicinity does not contain steep moist rocky slopes preferred by the slimy salamander or open habitat preferred by purple martins. Therefore, impacts to T&E species are not anticipated from this improvement, even if some disturbance around the bridge structure becomes necessary.

### Traction Power System - Electrification

Electrification is an option under Alternative D, extending from approximately MP 23.9 in Danbury to MP 39 in New Milford. Facilities required for electrification include catenary and support structures and two electrical substations, one in Brookfield and one in New Milford. There are no RTUs in this alternative. Seven (7) overhead (OH) bridges would need to be raised to provide enough clearance for the catenary wires to pass under

them. NDDDB records overlap the catenary and support structures and two of the OH bridge raisings; there are no NDDDB records at the substation sites.

**Catenary and support structures:** Based on the current conceptual layout, approximately 237 catenary poles would be located within NDDDB records #10, 11, 12, 13, 14, 15, 16, 17, and 18. The catenary structures would be installed in railroad ballast/gravel and may also occur within the edges of vegetated habitats, where these habitats abut and/or encroach upon the disturbed rail ROW. The track passes next to urban and suburban lands, cleared industrial properties, upland forest, forested wetlands, river banks, and open water ponds. At this conceptual stage of project design, the specific locations of individual poles requiring placement beyond the existing disturbed ROW are not known. While the potential impacts to T&E species habitat from the catenary installation are anticipated to be minor because the installations are located either within railroad ballast or along previously disturbed edges where habitat integrity is often disrupted, further coordination with the CTDEEP relative to state-listed species habitats will be conducted during the layout of pole locations in order to avoid and/or minimize impacts.

**Bridge Raisings:** Two of the seven bridge raising sites overlap with NDDDB records.

- **New Milford (MP 33.9) Old Pumpkin Hill Road Bridge:** This bridge over the tracks is located within NDDDB #15, which is a contiguous series of NDDDB records along the Still River. Old Pumpkin Hill Road meets Aldrich Road at a “T” where the west end of the bridge touches down. There are two listed species in proximity to this site:

	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Preferred Habitat</b>
1	Northern slimy salamander (amphibian)	<i>Plethodon glutinosus</i>	T	Rotting logs and leaf litter on steep, moist, rocky slopes in dense-canopy hardwood forests
2	Purple martin (swallow)	<i>Progne subis</i>	T	Open grassy areas and forest openings near streams, rivers, lakes, ponds, and marshes

Conceptual design anticipates the bridge raising to be constructed primarily with equipment staged on the roadway (during a road closure). However, there would be construction work and physical changes at the bridge ends (abutments), and there may be a need for temporary construction access along the sides of the bridge. Lands on all sides of the bridge could thus be affected. Construction is not expected to extend west of Aldrich Road (which runs north-south, parallel to the railroad tracks), where a designated critical habitat occurs along the Still River and its adjacent wetlands.

There are stands of large deciduous trees on the northwest and southwest corners of the bridge, which comprise narrow forested bands between the tracks and Aldrich Road. There are cultivated open fields on the southeast corner of the bridge, which are contiguous with a large forest block (over 100

acres). There is a fragmented patch of forest and shrub cover adjacent to recent residential development on the northeast corner. Wetlands are interspersed with these habitats on the east side. There would be impacts to all of these corners from bridge construction.

The site does not contain steep moist rocky slopes preferred by the slimy salamander, so impacts to that species are not anticipated. Disturbance of the open fields at the southeast corner of the bridge, however, could impact preferred habitat of the purple martin. As recommended by the CT DEEP, if purple martins are observed to be nesting on site, construction work should be conducted August-March to avoid nesting season. Further coordination with the DEEP would be necessary to identify known locations of this bird and impact avoidance measures. Protective measures include retaining undisturbed buffers around the nesting colony.

- **New Milford (MP 34.74) Erickson Road Bridge:** This bridge is also located within NDDB #15, almost a mile north of the Old Pumpkin Hill Road crossing. There is one listed species in proximity to this site:

	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Preferred Habitat</b>
1	Sharp-shinned hawk (raptor)	<i>Accipiter striatus</i>	E	Nests on large evergreens; seasonal resident (March-Sept)

At this site, broad forested wetlands associated with the Still River occur along the edge of Erickson Road on the west side of the bridge. This is a DEEP designated critical habitat area. East of the bridge, habitats are more fragmented, with wetland and upland forest patches; these are located between Erickson Road and the tracks on the south side of the bridge and between Erickson Road and houses on the north side of the bridge.

Similar to Old Pumpkin Hill Road bridge, construction methods call for construction to occur primarily from the road itself, with additional work around the abutments and temporary construction access along the sides of the bridge. Permanent and temporary impacts from bridge construction would directly affect the forested habitat on the west side of the bridge; approximately 990 SF (0.02 ac) of permanent impacts and approximately 2,390 SF (0.05 ac) of temporary impacts could result. The temporary impact areas would be restored, but there would likely be an impairment of habitat in those areas for some time after restoration, due to the many years required to restore forested habitats to their former complexity and structure. The permanent impact would be a very minor loss of forested habitat along an existing habitat edge, unlikely to substantially affect the viability of sharp-shinned hawk populations. However, further coordination with the CT DEEP would be conducted relative to this improvement to identify avoidance and protective measures, which may include a survey for nesting birds within the area of construction and avoiding construction during nesting season.

*Track Reconfigurations, Sidings and Connections*

There are five track curve reconfigurations proposed under Alternative D to improve rail operations and/or speed; all are located within or adjacent to NDDDB records. Crossover connections at the Danbury Yard and at MP 26.96, approximately 2.6 miles north of Danbury Yard, are planned for operational improvements; this is not located within or adjacent to NDDDB records. One storage siding spanning Danbury and Brookfield at MP 27.24 - 27.58 is proposed. This site is located in proximity to NDDDB #12 but no species were noted by the DEEP as being of concern relative to this improvement. Potential impacts from the track curve reconfigurations are described below.

**Track curve reconfigurations:** All five of the curve reconfigurations are located within NDDDB records. Three of the curves, however, are offset by only 1 or 2 feet from the existing track centerline, so no changes in ballast width, rail bed, or adjacent terrain are anticipated to occur at those curves, and thus no impacts to T&E species or their habitats are expected. Those curves are Curve 1B (within NDDDB #13), Curve 8A (within NDDDB #15), and Curve 9A (within NDDDB #17).

Curve 1A and 6A would be offset more than 2 feet and could thus disturb habitat areas adjacent to the tracks. The listed species and potential impacts at those curves are the following:

- **Curve 1A:** This curve is located within NDDDB #13. There is one listed species in proximity to this curve:

	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Preferred Habitat</b>
1	Tuckerman's sedge (perennial sedge)	<i>Carex tuckermanii</i>	SC	Deciduous swamps, shores of streams and ponds, wet meadows

The realignment is up to 16 feet west of the existing track centerline. The lands affected by the curve shift include a patchwork of deciduous woods and clearings in various states of regrowth, with grasses, shrubs and saplings. There is a cleared utility corridor that crosses the tracks approximately in the middle of this curve. This modified landscape is east of several roads which lie between the rail line and the Still River floodplains. There is a good possibility of preferred habitat for the Tuckerman's sedge in the footprint of the curve and therefore the construction of this curve may impact this species. The DEEP recommends avoiding impacts to these plants. Further coordination with the DEEP will be necessary prior to implementing this improvement to identify the locations of the plant (if already known by prior surveys), determine the need for additional surveys, and to establish protection measures.

- **Curve 6A:** This curve is located within NDDDB #15. There are two listed species in proximity to this site:

	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Preferred Habitat</b>
1	Northern slimy salamander (amphibian)	<i>Plethodon glutinosus</i>	T	Rotting logs and leaf litter on steep, moist, rocky slopes in dense-canopy hardwood forests
2	Purple martin (swallow)	<i>Progne subis</i>	T	Open grassy areas and forest openings near streams, rivers, lakes, ponds, and marshes

This proposed realignment is up to 3 feet west of the existing track centerline. The linear strip potentially affected by the realignment (approximately 1' wide beyond the existing rail bed) supports a narrow band of shrubs and saplings between Aldrich Road and the rail bed. A portion of the affected land is adjacent to a cleared storage yard and has minimal vegetation. There are no wetlands at this site. The condition of the affected strip indicates substantial prior disturbance and the very minor track shift does not require much land beyond the existing disturbed rail bed. However, given the lack of preferred habitat for the northern slimy salamander and the purple martin in the curve's disturbance area, impacts to T&E species are not anticipated from this improvement.

#### *Storage and Maintenance Yards*

There are no impacts to T&E species or their habitats anticipated from the New Milford Storage and Maintenance Yard, as this improvement is not located within an NDDB record.

#### **Alternative E - Improvements from South Norwalk to Wilton**

Alternative E is being considered at the direction of the State of Connecticut's Transportation Strategy Board. It would provide partial electrification of the Danbury Branch, from South Norwalk to Wilton, a distance of 7.5 miles. Parking and access improvements would be made at Merritt 7 station, and there would be minor modifications to track and structures along this section.

Alternative E would involve improvements to the Merritt 7 Station, track curve reconfigurations, and bridge improvements from MP 0 to MP 7.5, and partial electrification of the Danbury Branch from approximately MP 1.1 to MP 7.5. Impacts from this alternative are therefore a subset of the impacts of Alternative C.

#### *Passenger Stations (Existing Stations)*

There are no NDDB records in the vicinity of the Merritt 7 Station, which is the only improved station under this alternative. Therefore no impacts to T&E species or their habitats would result from this improvement.

### *Structures and Bridges*

There are 7 undergrade (UG) bridge replacements proposed by Alternative E; none are within NDDDB records. Therefore, no impacts to T&E species or their habitats would result from these improvements.

### *Traction Power System - Electrification*

For Alternative E, electrification facilities would extend from approximately MP 1.1 in Norwalk to MP 7.5 in Wilton. Facilities include two (2) electrical substations, one (1) RTU, and catenary and support structures. Of these facilities, catenary and support structures are the only type within an NDDDB record.

**Catenary and support structures:** Based on concept plans, there are approximately 12 catenary poles within NDDDB #1 in Alternative E. The rail ROW in this area is lined by dense residential neighborhoods of Norwalk on both sides. At the current conceptual stage of project design, specific locations of individual poles requiring placement beyond the existing disturbed ROW are not known. While the potential impacts to T&E species habitat from the catenary installation are anticipated to be negligible because catenary would be placed either within railroad ballast or disturbed urban lands at the edge of existing rail ROW within this project segment, further coordination with the CTDEEP relative to state-listed species habitats will be conducted during the layout of pole locations in order to avoid and/or minimize impacts.

### *Track Reconfigurations, Sidings and Connections*

For Alternative E, there are seven (7) curve reconfigurations plus a reconfiguration (CP241) to improve the branch connection with the New Haven mainline in South Norwalk. There are no passing or storage sidings proposed by Alternative E. None of these improvements overlap with NDDDB records, so there are no associated potential impacts to T&E species or their habitats.

## **MITIGATION**

Alternatives A and B would have no impacts and would therefore not require mitigation. Alternative E has a low likelihood of impacts to T&E species or their habitats, which would be associated with catenary installation. Further coordination with the DEEP relative to state-listed species habitats will be conducted during the layout of pole locations in order to avoid and/or minimize impacts.

Alternatives C and D would both cause impacts to habitats within range of state-listed T&E species or species of concern. Further coordination with the DEEP relative to specific locations of the species, field surveys, and protective measures will be conducted during further design phases in order to avoid and/or minimize impacts.

Where there would be the possibility of an incidental take of any state-listed T&E species from the construction, additional coordination would be carried out as necessary. The Department would work closely with the DEEP on the details of the impacts (what the impact will be, how the population will be affected, is the project economically justifiable, how many individuals would be displaced, etc.) and further coordinate with the Connecticut Office of Policy and Management (OPM) as necessary during the project approval process.

Where impacts cannot be avoided, mitigation for T&E species impacts may be required. Mitigation may be formulated as a condition for obtaining environmental permits from DEEP for project impacts to wetlands and watercourses and/or floodplains, or may be determined through separate approval processes with DEEP and OPM. Mitigation may be fulfilled simultaneously with wetland mitigation (if required for the project) or may consist of additional stand-alone measures. Given the presence of undeveloped lands of many types, as well as the occurrence of previously disturbed areas in the study corridor, there appear to be ample opportunities for T&E species habitat mitigation in the study corridor. Potential mitigation measures include (but are not limited to) the following:

- Monitoring of wildlife or plant populations
- Restoration or enhancement of habitat
- Restoration or enhancement of habitat connectivity; e.g., by installing culverts adapted for wildlife passage or removing physical barriers
- Preservation of high quality existing habitats at risk of development; e.g., through purchase or acquisition of development rights



## **APPENDIX A**

### **COORDINATION**



Connecticut Department of  
**ENERGY &  
ENVIRONMENTAL  
PROTECTION**

Inland Fisheries Division  
Habitat Conservation and Enhancement  
Natural History Survey – Natural Diversity Data Base  
79 Elm Street, 6<sup>th</sup> Floor  
Hartford, CT 06106-5127

September 22, 2011

Shawn Callaghan  
Fitzgerald & Halliday, Inc.  
72 Cedar Street  
Hartford, CT 06106  
(860) 256-4918

Subject: NDDDB Request #201106251  
Danbury Branch Phase II,  
Norwalk to New Milford, CT

Dear Shawn Callaghan,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided. According to our records, multiple State-listed species (RCSA Sec. 26-306) have been documented within or near your proposed project area.

Plants: Water marigold (*Bidens beckii*), a State Endangered plant species, has been documented at Umpawaug Pond in Redding, CT. This species typically occurs in shallow waters, though it has been recorded growing in waters up to 4.6 meters deep. *Bidens beckii* has submerged vegetation which superficially resembles the dissected leaves of other aquatic species, but it also produces emergent vegetation which extends above the water's surface and resembles other species of *Bidens*.

Due to the impacts that the proposed work may have on the shore of Umpawaug Pond, a survey should be conducted for *Bidens beckii*. Botanical field surveys of the site should be performed by a qualified botanist when the target plant species is identifiable (August through early September). A report summarizing the results of such survey should include (1) the survey date, (2) descriptions of the habitat and component vascular plant species, (3) notes on the presence/absence of State-listed plant species, (4) detailed maps of the area surveyed including the location and extent of State-listed plant species, and (5) a statement/résumé indicating the botanist's qualifications. The report should be sent to Nancy Murray (nancy.murray@ct.gov; 860-424-3589) for review.

In addition, *Carex tuckermanii* and *Carex bushii* have been documented in areas where rail work has been proposed (see attached maps). Both sedge species are considered species of State Special Concern. Please avoid impacts to these plants when possible. We work to conserve species of State Special Concern with the goal of preventing them from becoming threatened or endangered.

Best management practices should always be implemented and maintained during the entire course of the project. Many areas which this project encompasses are of unique biological significance as natural communities which provide important habitat for many animals. Unnecessary incursions into these natural communities will affect not only wildlife species, but also the ecological value of this area.

Appendix A provides a detailed list of all animal species on or within the vicinity of the project corridor. The list identifies, based on your maps, the sheet in which the animal has been documented to exist; and the habitats, ecology, and general mitigation guidelines. These summaries do not represent final mitigation requirements, but rather, provide a framework to facilitate project planning efforts. To summarize, the Wildlife Division recommends the following to encourage the protection of listed species.

For grassland and wetland birds: Bird species are increasingly faced with habitat loss and degradation; two of the primary factors influencing their decline in Connecticut and resulting in their designation as listed species. Birds are most susceptible to human disturbance during the breeding season, therefore, the Wildlife Division recommends the following guidelines:

- If state-listed birds are documented as nesting on this site, then work should be conducted between August through January, outside of the nesting seasons.
- A sufficient buffer zone should be delineated around the nesting and winter roosting sites to minimize disturbance.
- Degradation of the water quality, as well as the outright loss of freshwater and brackish marshes, should be prevented or minimized.

Reptiles, Amphibians, and Invertebrates: Reptiles, amphibians, and invertebrates could be impacted if work is planned for summer or fall in areas where they are known to occur. In this case, the Wildlife Division recommends the following guidelines:

- Install silt fencing around the work area prior to construction;
- conduct a sweep of the work area after silt fencing is installed and prior to construction;
- apprise workers of the possible presence of turtles, salamanders, or frogs, and provide a description of each species;
- any reptiles, amphibians, and invertebrates that are discovered should be moved, unharmed, to an area immediately outside of the fenced area in the same direction that it was walking;
- no vehicles or heavy machinery should be parked in any turtle, salamander, or frog habitat;
- work conducted during early morning and evening hours should occur with special care not to harm basking or foraging individuals; and
- all silt fencing must be removed after work is completed and soils are stable so that reptile and amphibian movement between uplands and wetlands is not restricted.

Invertebrates: The Wildlife Division recommends field surveys of the sites having records of beetles, moths, and dragonflies be conducted by a qualified entomologist prior to the initiation of such work. A report summarizing the results of such surveys should include (1) the survey date(s); (2) descriptions of the habitat; (3) notes on the presence/absence of State-listed invertebrate species; (4) detailed maps of the area surveyed including the location and extent of State-listed invertebrate species; and (5) a statement/résumé indicating the entomologist's qualifications. The report should be sent to Jenny Dickson, DEEP Wildlife Division ([jenny.dickson@ct.gov](mailto:jenny.dickson@ct.gov)) for further review.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the CT Department of Environmental Protection Bureau of Natural Resources and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the proposed work has not been initiated within 12 months of this review, contact the NDDB for an updated review.

Please contact me if you have any questions ([nancy.murray@ct.gov](mailto:nancy.murray@ct.gov); 860-424-3589). Thank you for consulting the Natural Diversity Data Base and continuing to work with us to protect State listed species.

Sincerely,

  
Nancy M. Murray  
Biologist, NDDB Program Coordinator

## APPENDIX A

### BIRDS

#### Peregrine Falcon (*Falco peregrines*) - (Sheet 1)

Status: Threatened

Habitat and Ecology: Though somewhat tolerable of human disturbance, peregrine falcons will be negatively affected if work is too close to the nest and occurs during their nesting season.

Recommendation: If this species is present on the project site, work should be conducted during the non-nesting season (June – March). Territories are usually established by March.

#### Purple Martin (*Progne subis*) - (Sheet 12)

Status: Threatened

Habitat and Ecology: Purple martins inhabit both urban and rural areas. They prefer open, grassy areas and forest openings near streams, rivers, marshes, ponds, or lakes. The purple martin is a seasonal Connecticut resident that arrives during April to begin its breeding and nesting season. As long as conditions remain favorable, martins will return year after year to the exact same nesting location. Purple martins exhibit a stronger communal lifestyle than most other birds and will nest in colonies of varying sizes.

Recommendation: If purple martins are nesting on site then work should be conducted between August through March, outside of the nesting season; and a sufficient buffer zone should be left around the colony to minimize disturbance.

The best way to help increase the purple martin population is to establish and manage artificial nesting cavities. Successfully attracting and hosting a purple martin colony depends on selecting quality housing, having the appropriate habitat, and practicing active colony management.

#### Sharp-shinned Hawk (*Accipiter striatus*) - (Sheet 13)

Status: Endangered

Habitat and Ecology: Sharp-shinned hawks build a large platform nest almost 2 feet across on the low side-limbs of an evergreen, usually only 12-14 feet from the ground. While conifers are preferred for nesting and for hiding their nests from predators, they can be found in mixed deciduous/conifer habitats. With the feeding requirements and quantity of prey necessary to maintain the young during the breeding season, chances are a nesting sharp-shinned hawk is foraging close to its nesting site.

Sharp-shinned hawk populations are affected by loss of habitat. The sharp-shinned hawk is a common migrant from the end of the summer until early November in Connecticut. Some individuals stay in the state during the winter. Except for migration counts, reliable

population data for Connecticut are scarce. The sharp-shinned is listed as an endangered species in Connecticut due to its small breeding population in the state.

Recommendation: Maintain large blocks of forested habitat to provide suitable nesting areas for sharp-shinned hawks.

## REPTILES

### Eastern Hognose Snake (*Heterodon platirhinos*) - (Sheet 11)

Status: Species of Special Concern

Habitat and Ecology: Eastern hognose snakes are a species that has been declining due to loss of suitable habitat. They favor sandy areas with well drained gravelly soils. This species is dormant from November 1 to April 1.

Recommendation: If work is to be conducted in Eastern hognose snake habitat, a herpetologist familiar with the habitat requirements of this species should perform surveys.

### Eastern Box Turtle (*Terrapene carolina Carolina*) - (Sheets 11)

Status: Species of Special Concern

Habitat and Ecology: Eastern Box Turtles require old field and deciduous forest habitats, which can include power lines and logged woodlands. They are often found near small streams and ponds, the adults are completely terrestrial but the young may be semiaquatic, and hibernate on land by digging down in the soil from October to April. They have an extremely small home range and can usually be found in the same area year after year. Eastern Box Turtles have been negatively impacted by the loss of suitable habitat. Loss of habitat is probably the greatest threat to turtles. Some turtles may be killed directly by construction activities, but many more are lost when important habitat areas for shelter, feeding, hibernation, or nesting are destroyed. As remaining habitat is fragmented into smaller pieces, turtle populations can become small and isolated.

Recommendation: Minimize destruction of eastern box turtle habitat.

### Wood Turtle (*Glyptemys insculpta*) - (Sheets 11, 14)

Status: Species of Special Concern

Habitat and Ecology: Wood turtles require riparian habitats bordered by floodplain, woodland or meadows. They hibernate in the banks of the river in submerged tree roots. Their summer habitat includes pastures, old fields, woodlands, powerline cuts and railroad beds bordering or adjacent to streams and rivers. This species has been negatively impacted by the loss of suitable habitat.

**Recommendation:** Conserve riparian habitat. Maintaining a buffer strip of natural vegetation (minimum of 100 feet) along the banks of streams and rivers will protect wood turtle habitat and also help improve the water quality of the stream system. Stream banks that are manicured (cleared of natural shrubby and herbaceous vegetation) or armored by rip rap or stone walls will not be used by wood turtles or most other wildlife species.

## AMPHIBIANS

Northern Slimy Salamander (*Plethodon glutinosus*) - (Sheets 11, 12)

Status: Threatened

**Habitat and Ecology:** The major threat facing the slimy salamander is the loss of undisturbed mature forests to urban and suburban development in southwestern Connecticut.

**Recommendation:** Protection and proper management of mature, second growth deciduous and hemlock forests in southwestern Connecticut is essential for maintaining populations of slimy salamanders in the state.

## INVERTEBRATES

Appalachian Blue (*Celastrina neglectamajor*) - (Sheets 6, 7)

Status: Threatened

**Habitat and Ecology:** Appalachian Blues are found in moist woodland edges.

Bronze Copper (*Lycaena hyllus*) - (Sheet 6)

Status: Species of Special Concern

**Habitat and Ecology:** Bronze coppers are found in fens, wet meadows, pastures and edges of watercourses. Bronze coppers are a species that has been declining due to loss of suitable habitat.

Ground Beetle (*Badister transverse*) - (Sheets 5, 6) Status: Species of Special Concern

Ground Beetle (*Bembidion lacunarium*) - (Sheet 4) Status: Species of Special Concern

Ground Beetle (*Bembidion pseudocautum*) - (Sheets 5, 6) Status: Species of Special Concern

Ground Beetle (*Bembidion semicinctum*) - (Sheet 5) Status: Species of Special Concern

Harris' Checkerspot (*Chlosyne harrisii*) - (Sheet 6)

Status: Species of Special Concern

**Habitat and Ecology:** The Harris' checkerspot butterfly is found in moist areas like marshes, bog edges, pastures and meadows. The host plant is flat-topped white aster (*Aster umbellatus*). The adult females lay eggs in clusters under host plant leaves. The caterpillars feed on leaves communally in a web and partially-grown caterpillars hibernate at the base of the host plant.

This invertebrate species has been negatively impacted by the loss of associated plant species and habitats. If favored plants are going to be impacted by this project this species may be affected.

**Lymnaeid Snail (*Fossaria rustica*) - (Sheet 6, 7)**

**Status:** Species of Special Concern

**Habitat and Ecology:** These are gill breathing snails which are very susceptible to siltation from dredging and other soil disrupting activities. Also, these individuals occur in shallow water less than three meters deep. Activities that degrade the water quality, particularly the dissolved oxygen and dissolved salts, will affect this species. Activities that cause a rapid fluctuation in water depth may affect this species. Runoff in the form of siltation or pollution or fluctuations in water depth will be detrimental. If shallow water areas are to be manipulated then the Wildlife Division recommends that an invertebrate biologist familiar with the habitat requirements of these species conduct surveys.

**Newman's Brocade (*Meropleon ambifusum*) - (Sheet 6)**

**Status:** Species of Special Concern

**Habitat and Ecology:** Newman's Brocade can be found in wetlands and calcareous fens.

**Northern Metalmark (*Calephelis borealis*) - (Sheets 7, 8)**

**Status:** Endangered

**Habitat and Ecology:** Northern Metalmarks are found in open woodlands, woodland glades and edges, on limestone soil when associated with hostplant *Senecio obovatus* and any activities which affect this plant will affect the butterfly. The actual project may be far enough away from the site of the host plants but it is not clear if heavy machinery will be in the area. For the safety of the plants it may be prudent to stake out or cordon off the area of concern so it can be avoided by contractors.

**Sedge Skipper(*Euphyes dion*) - (Sheet 6)**

**Status:** Species of Special Concern

**Habitat and Ecology:** The Sedge skipper is associated with open sunny marshes, wet fields, meadows, pond edges, swamps, fens, and floodplain wetlands. Activities that alter the physical or chemical nature of the aquatic habitat, cause siltation or any source of pollution will be detrimental.



If favored wetland habitat is going to be impacted by this project than the Sedge Skipper may be affected. The Wildlife Division recommends that a lepidopterist conduct surveys for this species. A report summarizing the results of such survey should include habitat description, invertebrate species list and a statement/resume giving the lepidopterist' qualifications. The Wildlife Division does not maintain a list of lepidopterists in the state. The results of this investigation can be forwarded to the Wildlife Division and, after evaluation, recommendations for additional surveys, if any, will be made.

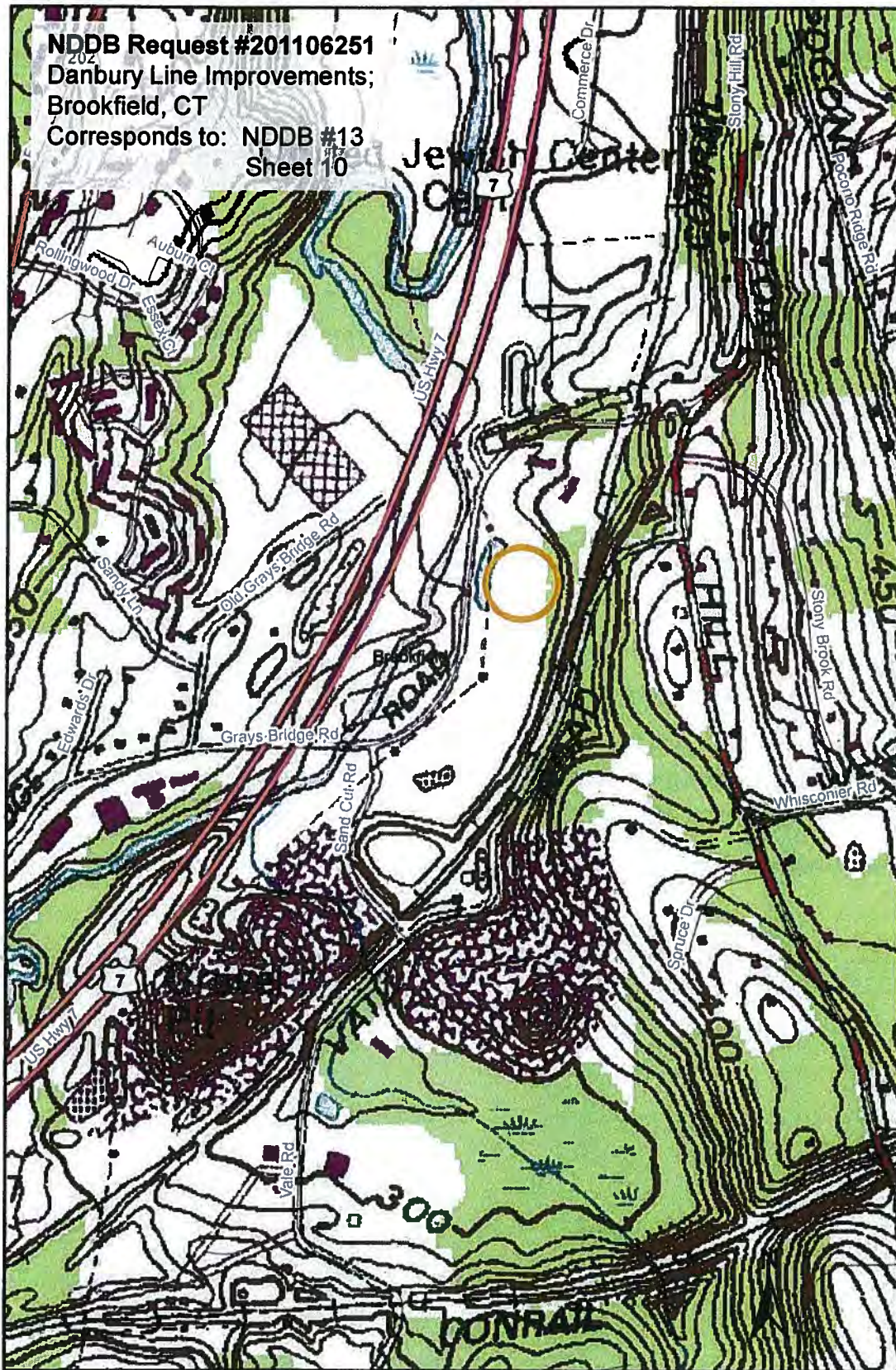
Whiteriver Crayfish (*Procambarus acutus*) - (Sheet 3) Status: Species of Special Concern

Recommendation for Invertebrates: The habitat and ecology of invertebrates such as beetles, cicadas, dragonflies, lacewings, and moths are varied and highly specific to the species. Surveys conducted should be conducted by a qualified entomologist to identify the location of invertebrates, and provide measures for their protection.



Connecticut Department of  
Energy & Environmental Protection  
Natural Diversity Data Base

**NDDB Request #201106251**  
Danbury Line Improvements;  
Brookfield, CT  
Corresponds to: NDDB #13  
Sheet 10



Tuckerman's sedge  
(*Carex tuckermanii*)  
State Special Concern

0 335 670 1,340 2,010 Feet

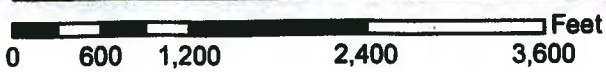
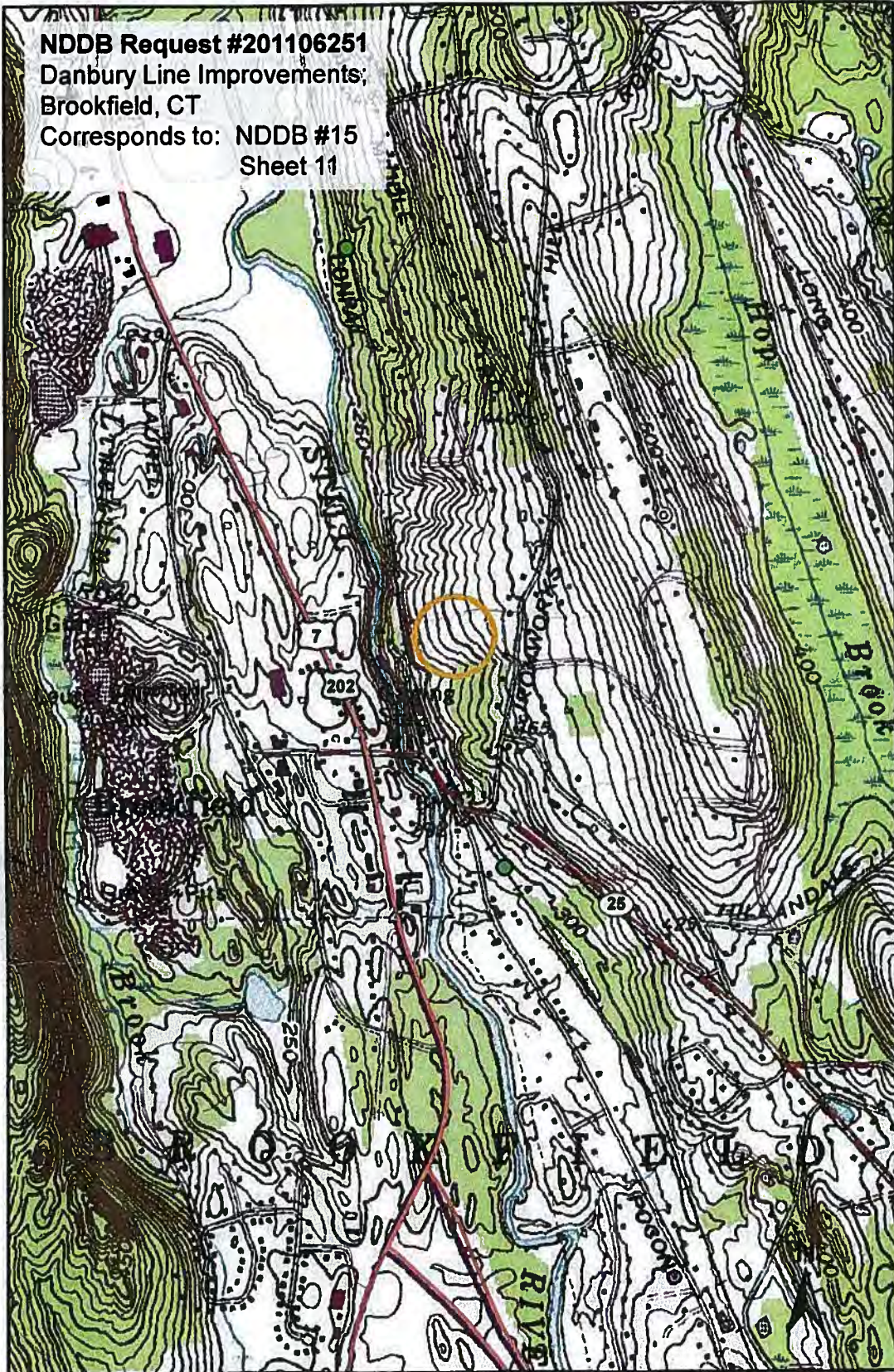
Map created 09/20/2011



Connecticut Department of  
Energy & Environmental Protection  
Natural Diversity Data Base

**NDDB Request #201106251**  
Danbury Line Improvements;  
Brookfield, CT  
Corresponds to: NDDB #15  
Sheet 11

*Carex bushii*  
State Special Concern



Map created 09/20/2011



August 9, 2011

Ms. Nancy Murray  
Central Permit Processing Unit  
Connecticut Department of Energy & Environmental Protection  
79 Elm Street  
Hartford, CT 06106-5127

Subject: Danbury Branch Improvement Program Alternatives Analysis/Draft Environmental Impact Statement (AA/DEIS); State Project #302-008

Dear Ms. Murray,

Please find the enclosed supplemental information relative to the Danbury Branch Improvement Program. This request is a follow-up to our previous coordination on this project dated March 26, 2008 [with response letters from you dated May 7 2008, May 23 2008, and June 23 2008]. As noted, FHI is under contract to URS/Washington Division to assist the Connecticut Department of Transportation (CTDOT) in preparing a federal Environmental Impact Statement (EIS) and Connecticut Environmental Impact Evaluation (EIE) for the project, pursuant to Federal Transit Administration (FTA) guidelines and oversight.

Phase I of the study has been completed, which identified and evaluated a range of preliminary improvements, including station improvements, electrification, new passing sidings, track realignment modifications, and extension of service from Danbury to New Milford. Now that the locations of proposed project activities have been identified, we are renewing coordination with your office relative to possible effects on state and federally listed species.

Project activities being evaluated in the DEIS include:

- Track realignments for operation and speed enhancements
- Station enhancements: parking and access improvements
- Extension of service to New Milford involving rail reconstruction and two new stations
- Bridge and structure upgrades: new ballast deck bridges and retaining walls
- Electrification system: catenary and electrical substations
- Yard and maintenance facility upgrades

Project impacts on threatened and endangered (T&E) species were evaluated by comparing the locations of the proposed project improvements with the latest available Connecticut Department of Energy and Environmental Protection (CTDEEP) Natural Diversity Database (NDDB) data. The date of this data is December 1, 2010 and it reflects the changes to the State Endangered Species list that became effective on July 1, 2010.

Ms. Nancy Murray, CTDEEP  
July 29, 2011  
Page 2

A review of the CTDEEP State and Federal Listed Species and Significant Natural Communities Geographic Information System (GIS) database for the project study corridor identified several locations of potential conflict with endangered species and/or significant natural communities. These areas of potential conflict are depicted on the attached USGS maps and described in detail on the attached sheet entitled NDDB Record Descriptions. These sites are listed from south to north along the study corridor and are numbered accordingly.

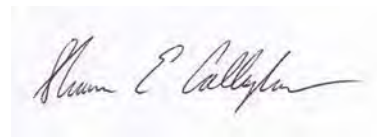
There are 10 track realignments, one station, eight bridges, one storage siding and one passing siding that have potential conflicts with NDDB mapping. Each of these improvements is displayed on the attached maps and a description of the planned construction activities is provided on the attached NDDB Record Descriptions sheet.

To support CTDOT's efforts to understand, avoid, and minimize project impacts, FHI requests your review of potential T&E species concerns and/or significant wildlife habitats related to the project activity locations.

We look forward to receiving any information you can provide us, and to future coordination with your office. Please feel free to contact me at (860) 256-4918 if you have any questions.

Very truly yours,

FITZGERALD & HALLIDAY, INC.



Shawn Callaghan  
Senior Planner II

Enclosure

Cc: Mr. Andrew Davis (CTDOT), Steve Gazillo (URS), L. Perelli Wright (FHI), S. Callaghan (FHI), File P788.01



# Request for Natural Diversity Data Base (NDDB) State Listed Species Review

All requesters must completely fill out Parts I - VII of this form and submit Attachments A and B, or the request will be rejected as incomplete.

**There are no fees associated with NDDB Reviews.**

DEP USE ONLY	
Request No.	_____
Hardcopy _____	Electronic files _____

## Part I: Preliminary Screening

Before submitting this request, you must review the Natural Diversity Data Base "State and Federal Listed Species and Significant Natural Communities Maps" found on the [DEP website](#). Follow the instructions on the map or in this form's instruction document. These maps are updated twice a year, usually in June and December.

Does your site, including all affected areas, meet the screening criteria according to the instructions:

Yes     No

Enter the date of the map reviewed for pre-screening: **December 2010**

## Part II: Requester Information

*\*If the requester is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, the company name shall be stated **exactly** as it is registered with the Secretary of State.*

*If the requester is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).*

### 1. Requester Company Name\*: **Connecticut Department of Transportation**

Name: **Andrew Davis**

Address: **2800 Berlin Turnpike, P.O. Box 317546**

City/Town: **Newington**

State: **CT**

Zip Code: **06131-7546**

Business Phone: **860-594-2157**

ext.

Fax:

Requester can best be described as:

Business Entity     Federal Agency     Municipal govt.     State agency     Individual

Tribe     Other (specify):

Acting as (Affiliation), pick one:

Property owner     Consultant     Engineer     Facility owner     Applicant

Biologist     Pesticide Applicator     Other representative (specify):

### 2. List Primary Contact to receive Natural Diversity Data Base correspondence and inquiries, if different from requester.

Company: **Fitzgerald & Halliday, Inc.**

Contact Person: **Shawn Callaghan**

Title: **Senior Planner II**

Mailing Address: **72 Cedar Street**

City/Town: **Hartford**

State: **CT**

Zip Code: **06106**

Business Phone: **860-256-4918**

ext.

Fax: **860-247-7206**

Email: **scallaghan@fhiplan.com**

## Part II: Requester Information (continued)

Affiliation of primary contact, check one:  Property owner  Consultant  Engineer  
 Facility owner  Applicant  Biologist  Pesticide Applicator  
 Other representative (specify): \_\_\_\_\_

### 3. Project Type:

Choose Project Type: Choose Type From Dropdown List , If other describe: **Danbury Branch Improvement Program Alternatives Analysis/Draft Environmental Impact Statement (AA/DEIS), State Project #302-008**

## Part III: Site Information

This request can only be completed for one site. A separate request must be filed for each additional site.

### 1. Site Location

Site Name or Project Name: **Danbury Branch Phase II AA/DEIS**

Town(s): **Norwalk, Wilton, Ridgefield, Redding, Bethel, Danbury, Brookfield, New Milford**

Street Address or Location Description:

**Approximately 500 feet on either side of the existing rail line between Norwalk, CT and New Milford, CT**

Size in acres, or site dimensions: **Approximately 38.2 miles long x 1,000 feet wide (4,630 acres)**

Latitude and longitude of the center of the site in decimal degrees (e.g., 41.23456 -71.68574):

Latitude: **41.396**

Longitude: **-73.449**

Method of coordinate determination (check one):

GPS  Photo interpolation using [CTECO map viewer](#)  Other (specify): **GIS**

2a. Describe the current land use and land cover of the site.

**Rail line and rail facilities**

b. Check all that apply and enter the size in acres or % of area in the space after each checked category.

Industrial/Commercial 3%

Residential 3%

Forest 3%

Wetland 3%

Field/grassland 3%

Agricultural 3%

Water 3%

Utility Right-of-way 3%

Transportation Right-of-way 76%

Other (specify): \_\_\_\_\_

## Part IV: Project Information

1. Is the subject activity limited to the maintenance, repair, or improvement of an existing structure within the existing footprint?     Yes     No    If yes, explain.

**Maintenance, repair and improvement may extend beyond the existing footprint in multiple locations.**



## Part IV: Project Information (continued)

2. Give a detailed description of the activity which is the subject of this request and describe the methods and equipment that will be used.

**Project activities being evaluated in the DEIS include:**

- **Track realignments for operation and speed enhancements**
- **Station enhancements: parking and access improvements**
- **Extension of service to New Milford involving rail reconstruction and two new stations**
- **Bridge and structure upgrades: new ballast deck bridges and retaining walls**
- **Electrification system: catenary and electrical substations**
- **Yard and maintenance facility upgrades**

3. Provide a contact for questions about the project details if different from Part II primary contact.

Name: **Same as Part II**

Phone:

Email:

## Part V: Request Type and Associated Application Type

Check *one* box from either Group 1 or Group 2, indicating the appropriate category for this request.

**Group 1.** If you check one of these boxes, fill out Parts I – VII of this form and submit the required attachments A and B.

- Preliminary screening was negative but an NDDDB review is still requested
- Request regards a municipally regulated or unregulated activity (no state permit/certificate needed)
- Request regards a preliminary site assessment or project feasibility study
- Request relates to land acquisition or protection
- Request is associated with a *renewal* of an existing permit, with no modifications

**Group 2.** If you check one of these boxes, fill out Parts I – VII of this form and submit required attachments A, B, and C.

- Request is associated with a *new* state or federal permit application
- Request is associated with modification of an existing permit
- Request is associated with a permit enforcement action
- Request regards site management or planning, requiring detailed species recommendations
- Request regards a state funded project, state agency activity, or CEPA request

If you are filing this request as part of a state or federal permit application enter the application information below.

Permitting Agency and Application Name: \_\_\_\_\_

State DEP Application Number, if known: \_\_\_\_\_

State DEP Enforcement Action Number, if known: \_\_\_\_\_

State DEP Permit Analyst/Engineer, if known: \_\_\_\_\_

Is this request related to a previously submitted NDDDB request?  Yes  No

Enter the previous NDDDB Request Number(s), if known: \_\_\_\_\_

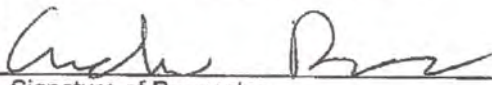
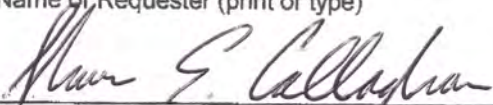
## Part VI: Supporting Documents

Please check each attachment submitted as verification that all applicable attachments have been supplied with this request form. Label each attachment as indicated in this part (e.g., Attachment A, etc.) and be sure to include the requester's name, site name and the date. **Please note that Attachments A and B are required for all requesters.** Attachment C (DEP-APP-007C) is supplied at the end of this form.

<input checked="" type="checkbox"/> Attachment A:	<b>Overview Map:</b> an 8 1/2" X 11" print/copy of the relevant portion of a USGS Topographic Quadrangle Map clearly indicating the exact location of the site.
<input checked="" type="checkbox"/> Attachment B:	<b>Detailed Site Map:</b> fine scaled map showing site boundary details on aerial imagery with relevant landmarks labeled. (Site boundaries in GIS [ESRI ArcView shapefile, in NAD83, State Plane, feet] format can be substituted for detailed maps, see instruction document)
<input checked="" type="checkbox"/> Attachment C:	<b>Supplemental Information, Group 2 requirement (attached, DEP-APP-007C)</b> <input checked="" type="checkbox"/> Section i: Supplemental Site Information and supporting documents <input checked="" type="checkbox"/> Section ii: Supplemental Project Information and supporting documents

## Part VII: Requester Certification

The requester and the individual(s) responsible for actually preparing the request must sign this part. A request will be considered incomplete unless all required signatures are provided.

<p>"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief."</p>	
 Signature of Requester	8-3-2011 Date
Andrew Davis Name of Requester (print or type)	Transportation Planner II Title (if applicable)
 Signature of Preparer (if different than above)	8-4-11 Date
Shawn Callaghan Name of Preparer (print or type)	Title (if applicable)

Note: Please submit the completed Request Form and all Supporting Documents to:

CENTRAL PERMIT PROCESSING UNIT  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 79 ELM STREET  
 HARTFORD, CT 06106-5127

Or email request to: [dep.nddbrequest@ct.gov](mailto:dep.nddbrequest@ct.gov)

# Attachment C: Supplemental Information, Group 2 requirement

## Section i: Supplemental Site Information

### 1. Existing Conditions

Describe all natural and man-made features including wetlands, watercourses, fish and wildlife habitat, floodplains and any existing structures potentially affected by the subject activity. Such features should be depicted and labeled on the site plan that must be submitted. Photographs of current site conditions may be helpful to reviewers.

**Because of the extensive size of the study area (approximately 38.2 miles long) there are many natural and man-made features that are potentially affected by the subject activity. Specific descriptions are included in the accompanying letter and can be provided for any locations identified by CTDEP as a result of this review.**

- Site Photographs (optional) attached
- Site Plan/sketch of existing conditions attached

### 2. Biological Surveys

Has a biologist visited the site and conducted a biological survey to determine the presence of any endangered, threatened or special concern species  Yes  No

If yes, complete the following questions and submit any reports of biological surveys, documentation of the biologist's qualifications, and any NDDB survey forms.

Biologist(s) name:

Habitat and/or species targeted by survey:

Dates when surveys were conducted:

- Reports of biological surveys attached
- Documentation of biologist's qualifications attached
- [NDDB Survey forms](#) for any listed species observations attached

## Section ii: Supplemental Project Information

1. Provide a schedule for all phases of the project including the year, the month and/or season that the proposed activity will be initiated and the duration of the activity.

**This project is still in the alternatives analysis study phase of the project, therefore, construction plans and scheduling has not yet been determined.**

2. Describe and quantify the proposed changes to existing conditions and describe any on-site or off-site impacts. In addition, provide an annotated site plan detailing the areas of impact and proposed changes to existing conditions.

**The attached maps depict the locations of project elements that overlap with mapped NDDB areas. Detailed site plans have not been developed at this conceptual engineering stage. However, the attached sheet entitled NDDB Record Descriptions provides explanations of the proposed work based on current best professional judgement.**

- Annotated Site Plan attached

**NDDB Record Descriptions**  
Danbury Branch Improvement Program Alternatives Analysis/  
Draft Environmental Impact Statement (AA/DEIS)  
State Project #302-008  
8/9/11

The descriptions listed below are for mapped NDDB areas that show a potential conflict with the study corridor based upon the most recent NDDB GIS mapping (December 2010). Not all NDDB Record areas have proposed project improvements, as described below. The records are numbered #1 through #18 and are listed from south to north along the study corridor.

Note that a track reconfiguration sometimes consists of several curve shifts. In cases where two or more curves are lumped together as one reconfiguration, it means that the curves are interdependent in their construction (one curve would not be constructed without the others in the group).

Two of the project activities affect long stretches of rail and therefore occur within multiple NDDB Records: Catenary and Support Structures and Rail Reconstruction. Those activities are described first, followed by the descriptions of activities and conditions within each NDDB Record.

Catenary and Support Structures

Electrification of the Danbury Branch is proposed from Norwalk to Danbury or Norwalk to Wilton, and is an option (vs. diesel power) for the potential new train service extension from Danbury to New Milford. The traction power system for electrification of the rail line would require the installation of catenary poles to hold the electrical wires along the study corridor. Poles are located within 10-12 feet of the center line of track. The permanent impact areas at each pole are very small (20 square feet). Typically, installation of catenary poles is accomplished by track-mounted machinery, with minor hand-work around each foundation to remove spoils and restore the ground to former conditions. Catenary structures will fall within NDDB records #1, 2, 4, 5, 6, 7, 8, and 9. There are a total of 171 poles within these records, including 12 poles in an urbanized portion of Norwalk (NDDB #1) and the rest in less intensively developed areas from Wilton to Danbury. Catenary structures will also be installed within NDDB records #10, 11, 12, 13, 14, 15, 16, 17, and 18. Based on the current conceptual layout, a total of 237 poles are located within these NDDB records.

The catenary structures will be installed in railroad ballast/gravel and may also occur within the edges of vegetated habitats, where these habitats abut and/or encroach upon the disturbed rail ROW. The track passes next to urban and suburban residential lands, cleared industrial properties, upland forest, forested wetlands, and open water ponds. No poles are anticipated in water, but some impacts to state and federal wetlands are expected, indicating some potential for disturbance of T&E species associated with wetland habitats.

Existing (unused) catenary poles would be removed in the Norwalk to Danbury or Norwalk to Wilton alternatives. The installation of catenary structures would not be expected to cause barrier effects to wildlife movements.

Rail reconstruction

Rail reconstruction would be required only for the 14.7 mile service extension from Danbury to New Milford, to provide a higher quality track. This work would essentially replace the existing rail in place and therefore would not change track profiles or ground elevations. The track in most locations is centered within level ground stabilized by ballast and gravel. The replacement work will be done in short segments by rail-mounted equipment, take place in level areas of gravel and ballast fill, and will be stabilized as soon as the replacement section is in place.

This activity is not expected to physically disrupt adjacent natural resources, except where the track curve reconfigurations would modify the alignment of the tracks. Where those curve realignments occur within an NDDB record, they are described individually under that record.

#### Record #1

There are no project improvements proposed within this mapped NDDB record area in Norwalk.

#### Record #2

There is one track realignment (which has two curves) and one bridge proposed within this mapped NDDB record area in Wilton. Curve 8 is offset from the existing track by only one foot, so no changes in rail bed or habitat would occur from Curve 8. Curve 7E will involve realignment of the track up to 8 feet to the west. This reconfiguration may require excavation and/or fill in upland deciduous shrubs. The overhead Route 7 Bridge replacement at milepost (MP) 7.87 is a roadway bridge over the rail line. No wetland resources are anticipated to be directly impacted in the footprint of construction of this bridge. Indirect impacts to off-site wetlands will be minimized to the greatest extent possible through proper implementation of construction Best Management Practices (BMPs) and stormwater management measures. This area is a mix of residential and industrial uses, with undeveloped, forested land as well. This track shift may impact linear trackside wetlands that have formed at the base of the track ballast.

#### Record #3

There are no project improvements proposed within this mapped NDDB record area.

#### Record #4

There is one track realignment (which has two curves) proposed within this mapped NDDB record area in Redding. Curve 13D will involve realignment of the track one foot to the east. This track realignment will be within the previously disturbed and maintained railroad right-of-way (ROW). The surrounding area is a mix of residential uses with undeveloped, forested land. Curve 14A involves realignment of the track 13 feet to the east where deciduous upland forest exists. This track shift occurs within a suburban setting.

#### Record #5

There is one track realignment (which has four curves) and one bridge proposed within this mapped NDDB record area in Redding. The bridge is interdependent in its construction with one of the curves (its construction is grouped with the curve). Each curve impacts a slightly different landscape.

- Curve 14B will involve realignment of the track by up to 13 feet to the west. This reconfiguration may require excavation and/or fill in upland deciduous forest. This track shift occurs within a rural residential setting.
- Curve 14C will involve realignment of the track by up to 36 feet to the west. This reconfiguration may require excavation and/or fill (and a retaining wall) in upland forest. There is a small watercourse that crosses under the tracks within the length of this curve, such that the curve reconfiguration may require a culvert modification. A very short linear trackside wetland may be impacted by this curve.
- Curve 14D will involve realignment of the track by up to 14 feet east of the existing track and includes replacement of the rail bridge over Simpaug Turnpike (MP 14.8). This reconfiguration may require excavation and/or fill in upland forest along the tracks and adjacent to the back yards of two or three houses, which are within 50-100 feet of the tracks. No wetland resources are anticipated to be directly impacted by the footprint of this bridge. There is a linear trackside wetland area on the west side of the tracks near the northern terminus of the curve; however, the curve is proposed to return to the track's current location here (within the disturbed rail bed), so no linear trackside wetland impacts are anticipated.

- Curve 15A is offset to the east only two feet from the existing centerline, so its construction is not expected to result in expansion or modification of the existing disturbed rail bed. A short linear trackside wetland is located on the west side of the tracks and wetlands associated with Umpawaug Pond are located on the east side of the tracks.

#### Record #6

There is one track realignment (which has two curves) proposed within this mapped NDDB record area in Redding. Curve 15B will involve realignment of the track up to 14 feet to the west. This reconfiguration may require excavation and/or fill in upland deciduous forest. This track shift occurs within a rural residential setting. Curve 15C will involve realignment of the track up to 23 feet to the east. This reconfiguration may require excavation and/or fill in the open water and adjacent wetlands of Umpawaug Pond. This track shift may impact linear trackside wetlands that have formed at the base of the track ballast as well.

#### Record #7

There is one track realignment (which has two curves) and a bridge proposed within this mapped NDDB record area in Redding. Curve 16A will involve realignment of the track up to 22 feet to the east. This reconfiguration may require excavation and/or fill into a mix of upland and wetland deciduous forest. Wetland mapping shows a wetland on both sides of the track in this location, associated with the flow of a small stream which crosses the tracks. Curve 16B will involve realignment of the track less than one foot, so there are no potential impacts from this improvement outside the already-disturbed rail bed.

The bridge at MP 16.4 is over Umpawaug Pond Brook. Potential direct impacts to water and wetland resources could occur at this water crossing if the existing bridge foundations or abutments require repair, rehabilitation, or replacement. Potential direct impacts will be minimized to the greatest extent possible through future design efforts and consideration of non-intrusive construction methods, among other means. Indirect impacts to wetlands will be minimized to the greatest extent possible through proper implementation of construction BMPs and stormwater management measures.

#### Record #8

There are no project improvements proposed within this mapped NDDB record area.

#### Record #9

There is one track realignment and a bridge proposed within this mapped NDDB record area in Bethel. Curve 19A has a proposed offset of up to 4 feet west of the existing rail alignment. The narrow strip of potentially impacted land is a light fringe of trees and shrubs at the rear of a highly disturbed industrial warehouse/storage yard. There are linear trackside wetlands which may be impacted by this improvement as well.

The bridge over Grassy Plains Road at MP 19.64 is a bridge replacement on the existing rail alignment. Most of the work is expected to be accomplished from the already disturbed rail and roadway ROWs. For this bridge, there are no wetland resources anticipated to be directly impacted in the footprint of construction. Indirect impacts to off-site wetlands will be minimized to the greatest extent possible through proper implementation of construction BMPs and stormwater management measures. There are no anticipated changes in the rail bed, its embankments, or adjacent landscape features.

#### Record #10

There are no project improvements proposed within this mapped NDDB record area.

#### Record #11

There is one bridge proposed within this mapped NDDB record area in Danbury (MP 26.6) over the Still River. This is a bridge replacement on the existing rail alignment that will entail work in the water. Preliminary design concepts call for a 2-span bridge with one pier located in the water.

Additional temporary impacts in the water are expected during construction associated with the installation of the pier. Use of flotation dams at the perimeter of in-water work areas and other appropriate measures will be implemented to contain the work area and minimize turbidity and other temporary water quality effects during construction. Construction staging for pier construction may be possible from the existing disturbed ROW. If land areas directly adjacent to the river and outside the disturbed rail bed are required, disturbance to wetland forested habitats along the river could result. In addition, if the existing bridge foundations or abutments require repair, rehabilitation or replacement, there could be additional direct impacts to water resources and wetlands at this crossing. Potential direct impacts will be minimized to the greatest extent possible through future design efforts and consideration of non-intrusive construction methods, among other means. Indirect impacts to wetlands will be minimized to the greatest extent possible through proper implementation of construction BMPs and stormwater management measures.

#### Record #12

There is a storage siding (MP 27.24 to 27.58) proposed within this mapped NDDB record area in Danbury and Brookfield. The storage siding would replace land that contains a mix of sparse low shrubs and deciduous trees. Although currently constricted between railroad tracks and small in size, this area is adjacent to remnant oxbows and other water features of the Still River and there are some drainage features that transect the overall area which may provide for some habitat connectivity.

#### Record #13

There is one track realignment (which has two curves) proposed within this mapped NDDB record area in Brookfield. Curve 1A has a proposed offset of up to 16 feet west of the existing track centerline. The lands affected by the curve shift include a patchwork of deciduous woods and clearings in various states of regrowth, with grasses, shrubs and saplings. There is a cleared utility corridor that crosses the tracks approximately in the middle of this curve. This modified landscape is east of several roads which lie between the rail line and the Still River floodplains. Curve 1B will involve realignment of the track two feet to the west, so there are no potential impacts from this improvement outside the already-disturbed rail bed.

#### Record #14

There are no project improvements proposed within this mapped NDDB record area.

#### Record #15

There are two track realignments, three bridges, a station and a passing siding proposed within this mapped, contiguous series of NDDB records along the Still River. This NDDB record area is located in Brookfield and New Milford. The first realignment is for Curve 6A, which has a proposed realignment up to 3 feet west of the existing track centerline. The linear strip potentially affected by the realignment supports a narrow band of shrubs and saplings between Aldrich Road and the rail bed. A portion of the affected land is adjacent to a cleared storage yard and has minimal vegetation. The condition of the affected strip indicates substantial prior disturbance and the very minor track shift does not require much land beyond the existing disturbed rail bed. Curve 8A will involve realignment of the track only one foot to the east, so there are no potential impacts from this improvement outside the already-disturbed rail bed.

There are two bridges in New Milford that would need to be raised to provide enough clearance for the catenary wires to pass under them, if new service between Danbury and New Milford goes forward as an alternative and electrification was selected: Old Pumpkin Hill Rd (MP 33.9) and Erickson Rd. (MP 34.74) as described below.

The Old Pumpkin Hill Road Bridge construction methods call for the bridge raising to be constructed primarily with equipment staged on the roadway (during a road closure). However, there will be construction work and physical changes at the bridge ends (abutments), and there may be a need for temporary construction access along the sides of the bridge. Lands on all sides of the bridge could thus be affected. Construction would not extend farther than the existing pavement of Aldrich Road which runs north-south, parallel to the railroad tracks. There is DEP designated critical habitat along the west side of the road (beyond impact area), encompassing the Still River and its adjacent wetlands. At this bridge, there are stands of large deciduous trees on the northwest and southwest corners of the bridge, which comprise narrow forested bands between the tracks and Aldrich Road. There are cultivated open fields on the southeast corner of the bridge, which is contiguous with a large forest block (over 100 acres). There is a fragmented patch of forest and shrub cover adjacent to recent residential development on the northeast corner. Wetlands are interspersed with these habitats on the east side.

The Erickson Road Bridge is also located within NDDB #15, almost a mile north of the Old Pumpkin Hill Road crossing. Similar to Old Pumpkin Hill Road Bridge, construction methods call for the bridge raising to be constructed primarily from the road itself, with additional work around the abutments and temporary construction access along the sides of the bridge. At this site, the broad wetlands associated with the Still River occur along the edge of Erickson Road on the west side of the bridge. This is a DEP designated critical habitat area. There are more fragmented wetland and upland forest patches on the east side of the bridge as well. Temporary impacts to forested wetlands and a similar amount of uplands may result from construction access.

The bridge over Old Middle Road in New Milford (MP 33.07) is a replacement bridge on existing alignment. No wetland resources are anticipated to be directly impacted in the footprint of construction. There are no anticipated changes in rail bed, rail embankments, or adjacent landscape features.

At the Brookfield Station and passing siding (MP 31.46 to 31.96), the proposed parking lot, drop-off area, platforms, and other station elements occur partially on previously disturbed ground already used for parking and partially on undeveloped forested land. The forested land on the west side of the tracks supports deciduous trees along the banks of the Still River, which lies at a distance of 25 to 100 feet from the conceptual footprint of the station development. The station development may impact linear wetlands adjacent to the track as well. Construction of the siding would occur on the east side of the tracks opposite the station development, between the power lines and the existing track. This is a lightly wooded deciduous upland bordered by residential properties to the east.

#### Record #16

There are no project improvements proposed within this mapped NDDB record area.

#### Record #17

There is one track realignment proposed within this mapped NDDB record area in New Milford. Curve 9A will involve realignment of the track less than one foot to the east, so there are no potential impacts from this improvement outside the already-disturbed rail bed.

#### Record #18

There are no project improvements proposed within this mapped NDDB record area.



# Danbury Branch Improvement Program Environmental Impact Statement

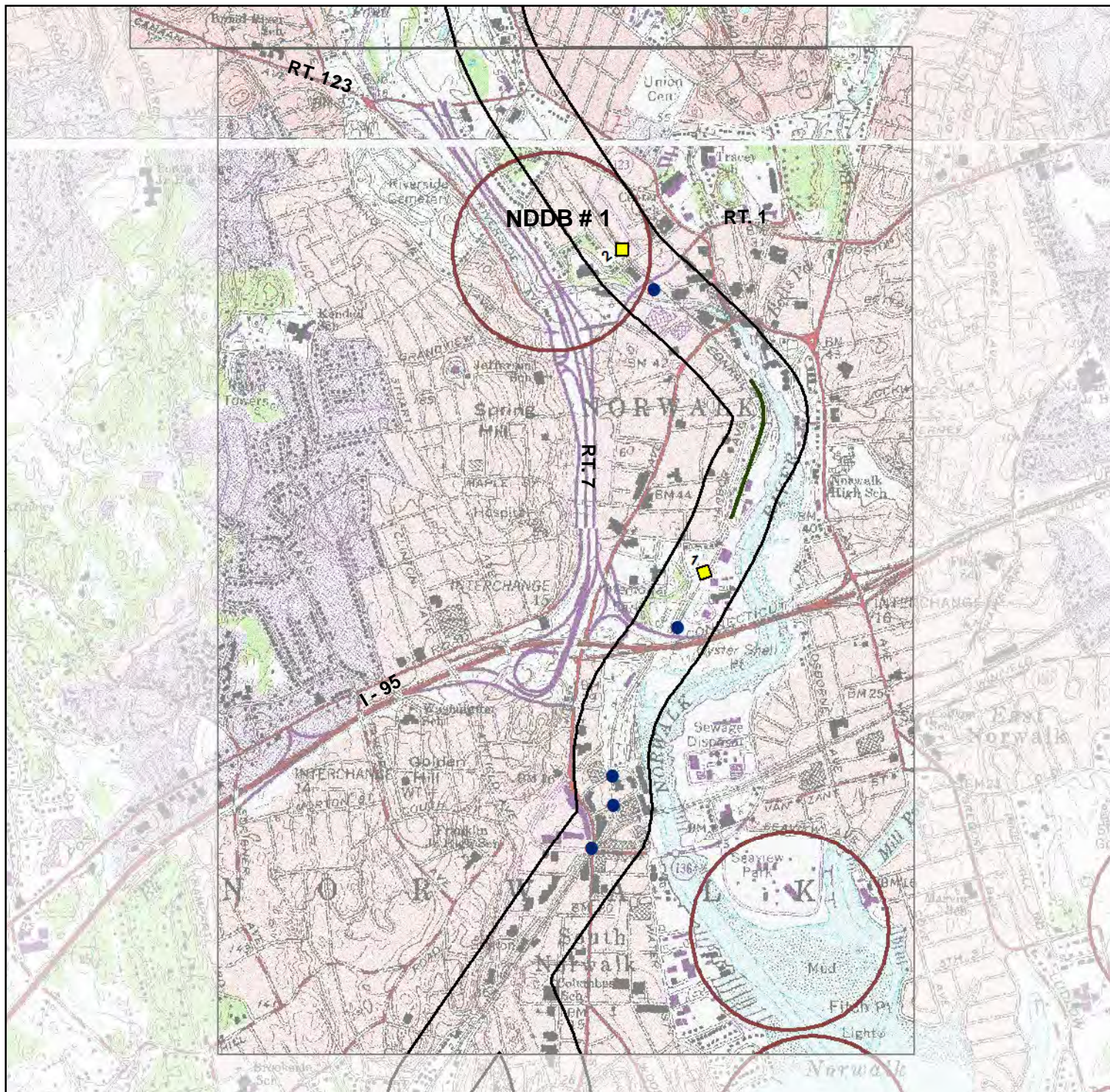
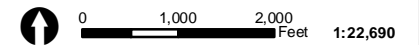
**State Project # 302-008**

- Proposed Electrical Facility or Structure Improvement
- Proposed Station Area Improvement or Maintenance Yard
- Proposed Curve Reconfiguration or Siding
- Study Corridor
- CT NDDB Record - Dec. 1, 2010
- Approximate Study Milepost (MP)







NDDB Records in  
Study Corridor

**Sheet 1 of 14**

U.S.G.S. Quadrange:  
Norwalk South, Norwalk North, CT



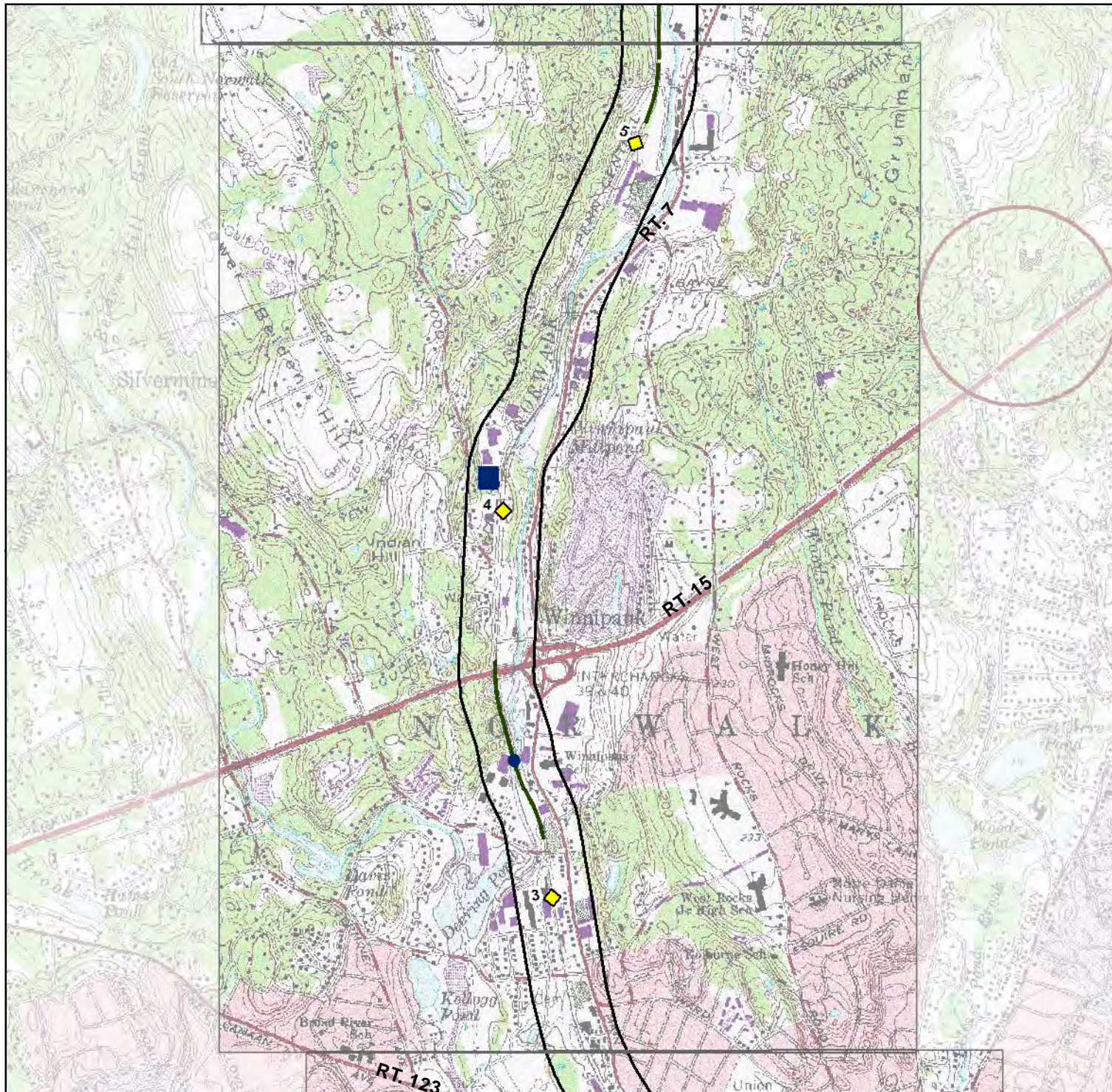
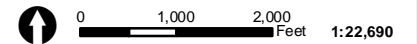
**Danbury Branch  
Improvement Program  
Environmental Impact  
Statement  
State Project # 302-008**

-  Proposed Electrical Facility or Structure Improvement
-  Proposed Station Area Improvement or Maintenance Yard
-  Proposed Curve Reconfiguration or Siding
-  Study Corridor
-  CT NDDB Record - Dec. 1, 2010
-  Approximate Study Milepost (MP)







NDDB Records in Study Corridor

**Sheet 2 of 14**

U.S.G.S. Quadrange:  
Norwalk North, CT



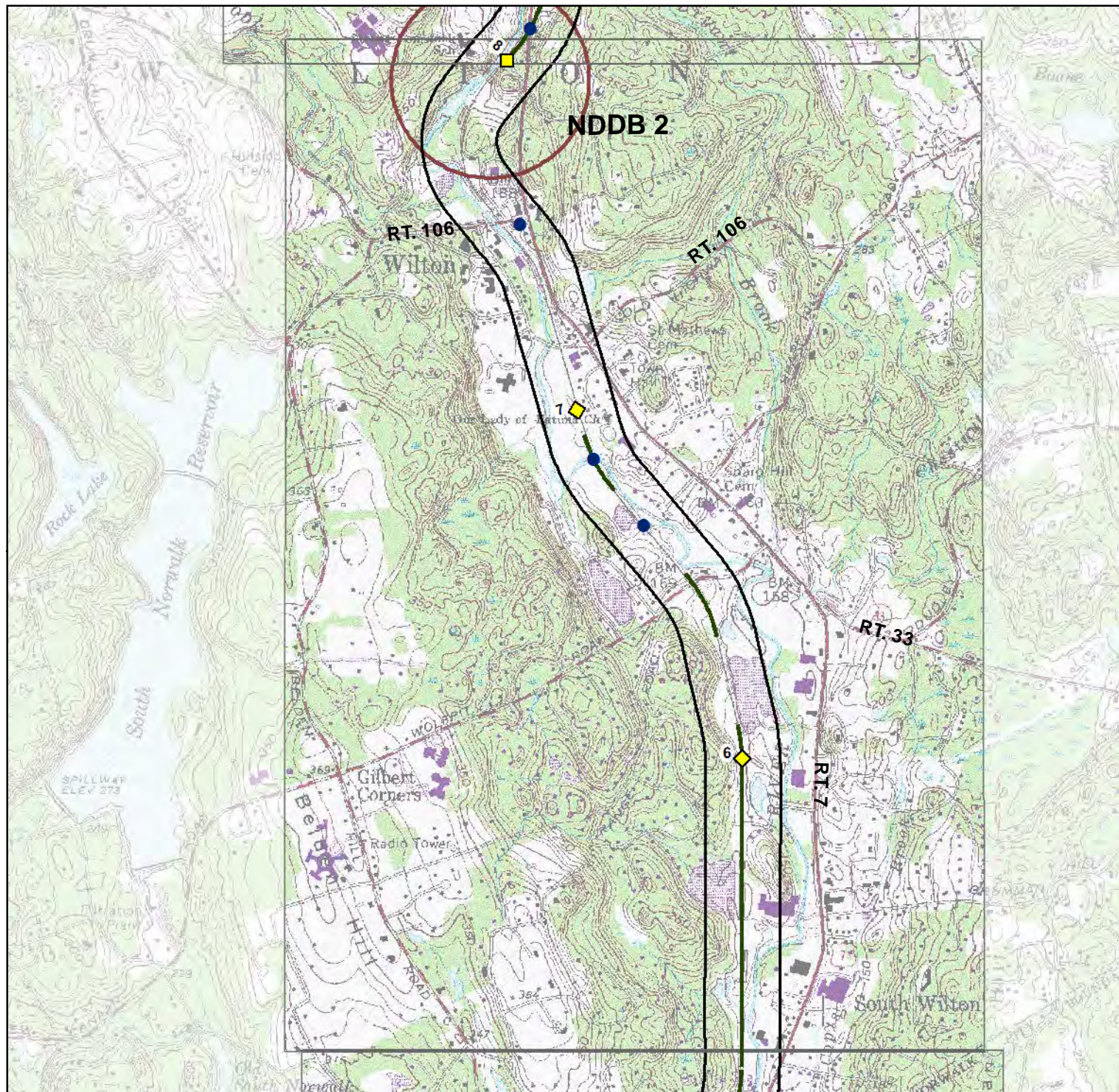
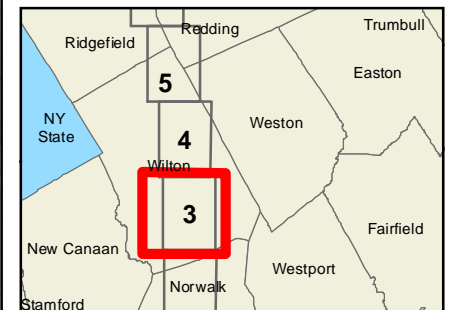
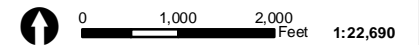
**Danbury Branch  
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-  Proposed Electrical Facility or Structure Improvement
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-  Study Corridor
-  CT NDDB Record - Dec. 1, 2010
-  Approximate Study Milepost (MP)







NDDB Records in Study Corridor

**Sheet 3 of 14**

U.S.G.S. Quadrange:  
Norwalk North, CT



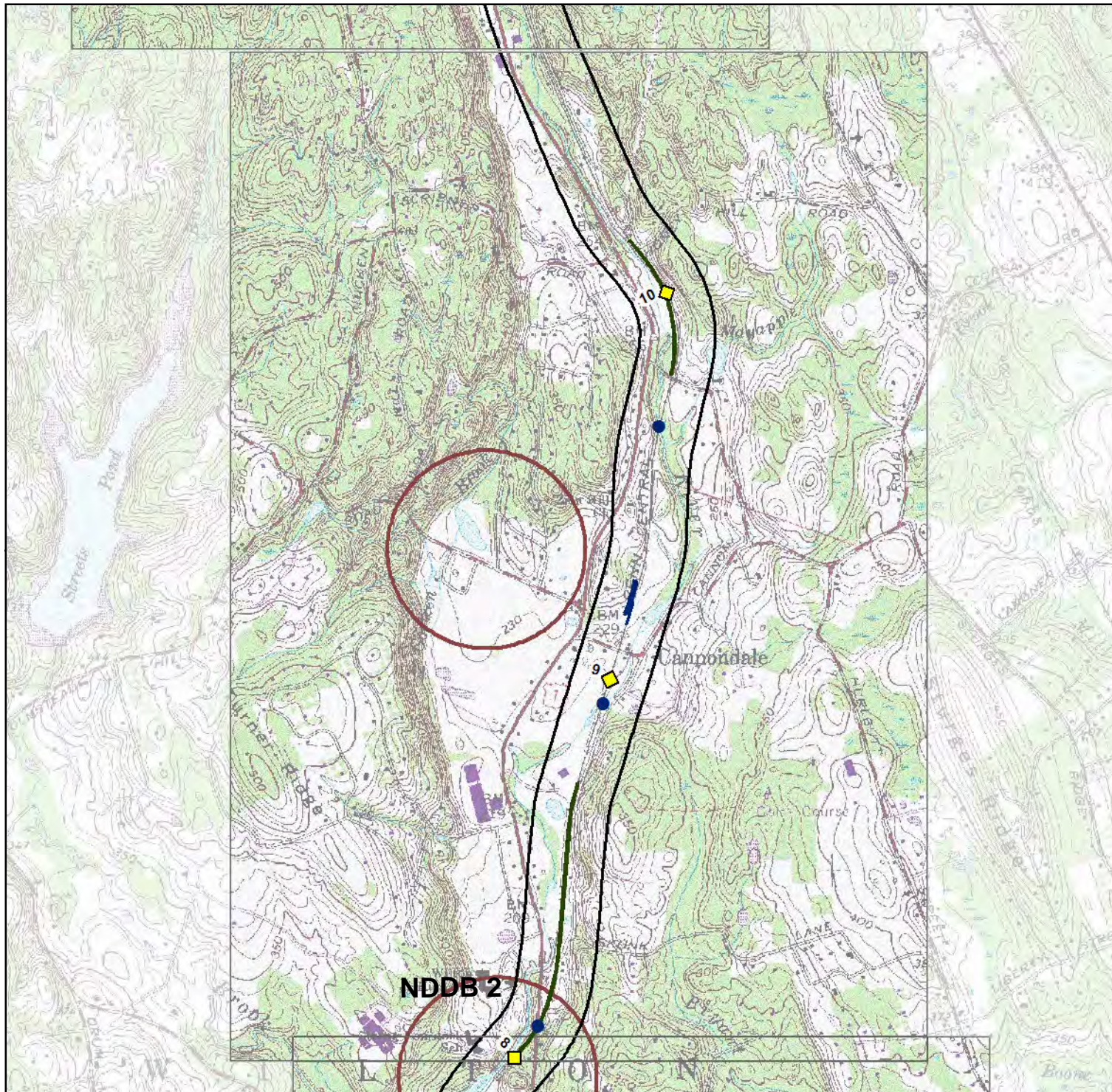
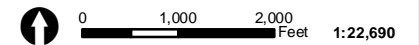
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-  Proposed Electrical Facility or Structure Improvement
-  Proposed Station Area Improvement or Maintenance Yard
-  Proposed Curve Reconfiguration or Siding
-  Study Corridor
-  CT NDDB Record - Dec. 1, 2010
-  Approximate Study Milepost (MP)







NDDB Records in Study Corridor

**Sheet 4 of 14**

U.S.G.S. Quadrange:  
Norwalk North, CT



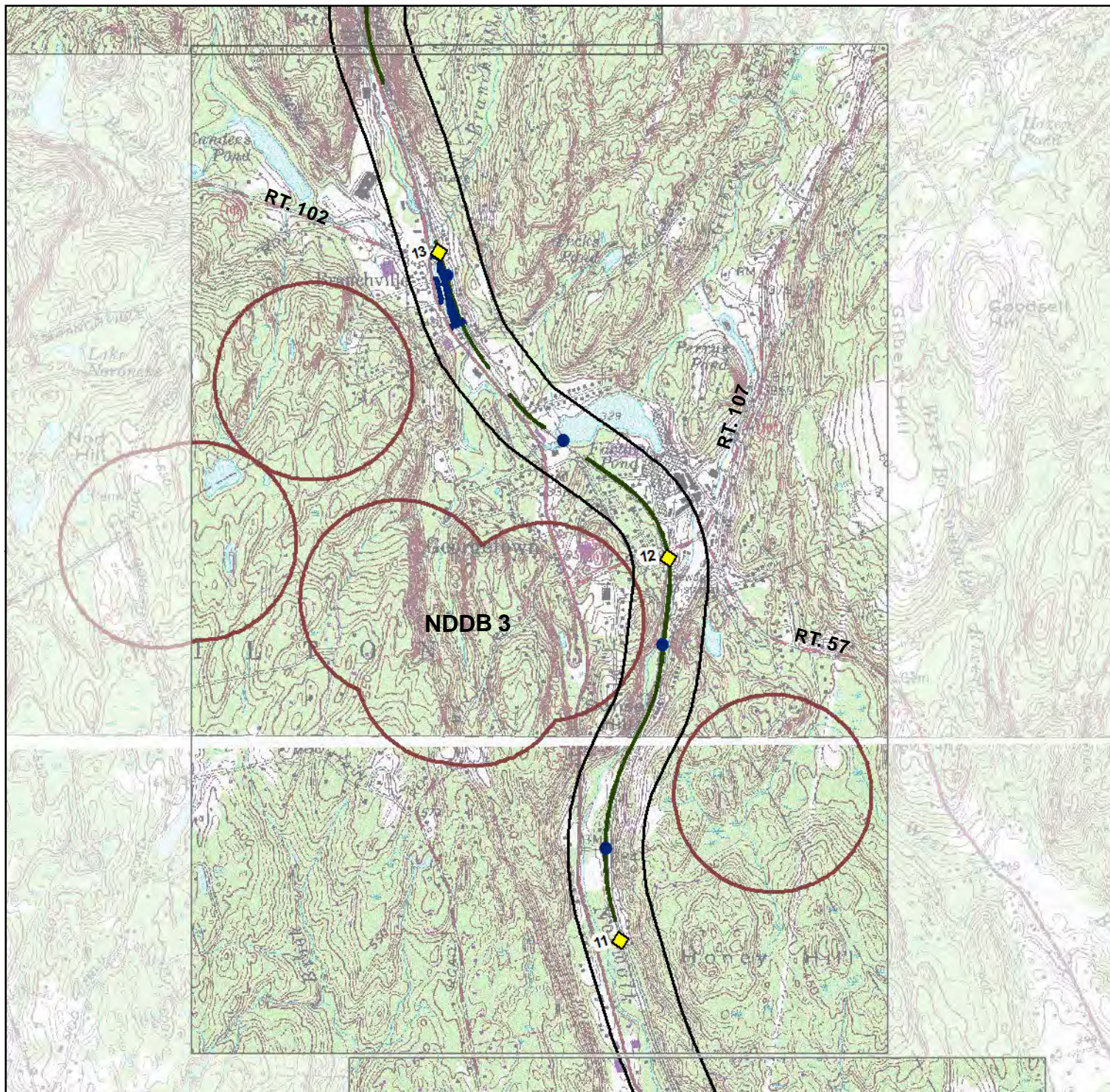
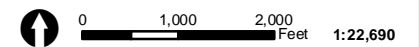
**Danbury Branch  
Improvement Program  
Environmental Impact  
Statement  
State Project # 302-008**

-  Proposed Electrical Facility or Structure Improvement
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-  CT NDDB Record - Dec. 1, 2010
-  Approximate Study Milepost (MP)







NDDB Records in Study Corridor

**Sheet 5 of 14**

U.S.G.S. Quadrange:  
Norwalk North, Bethel, CT



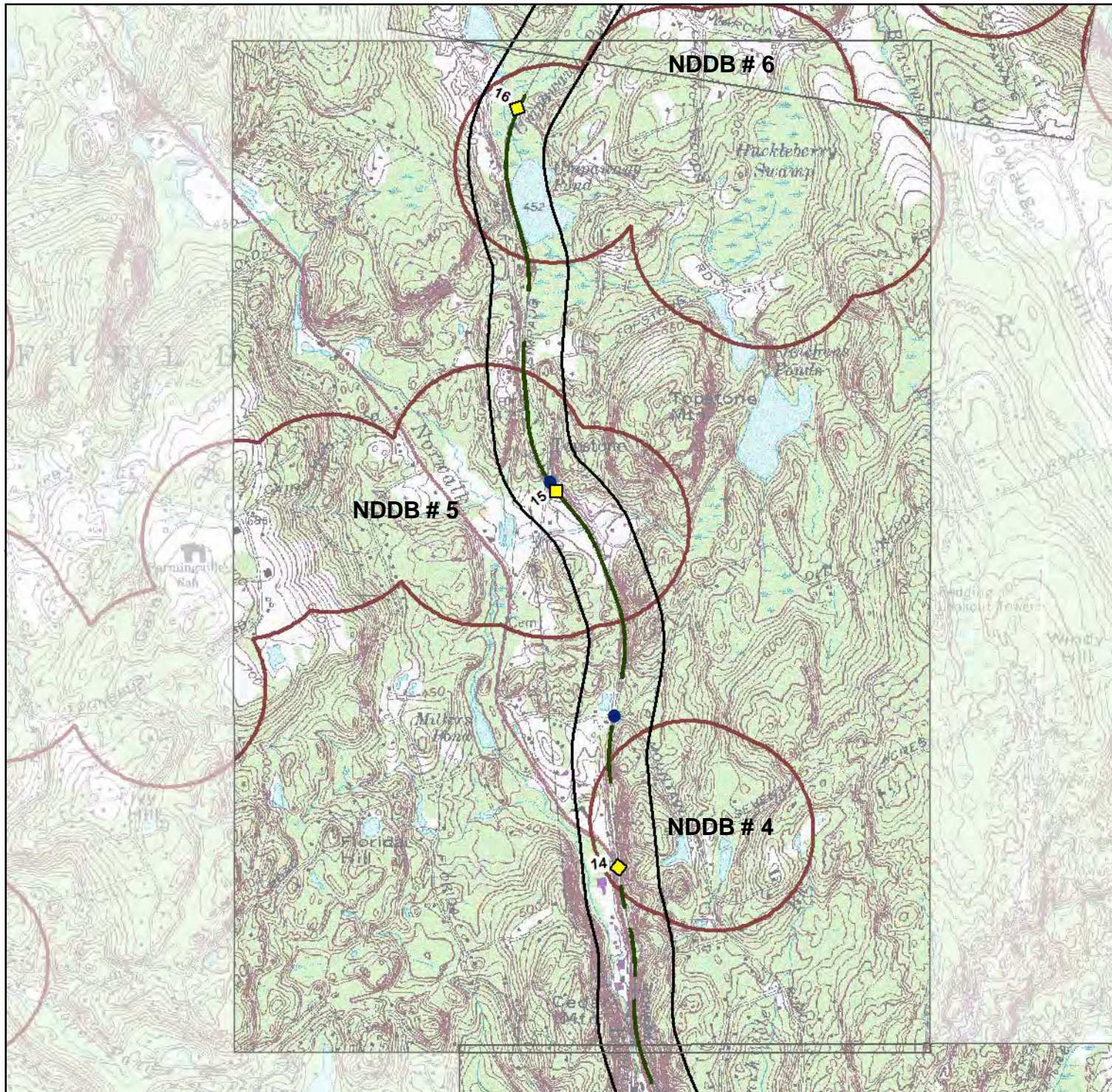
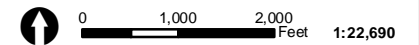
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Environmental Impact  
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NDDB Records in Study Corridor

**Sheet 6 of 14**

U.S.G.S. Quadrange:  
Bethel, CT



# Danbury Branch Improvement Program Environmental Impact Statement

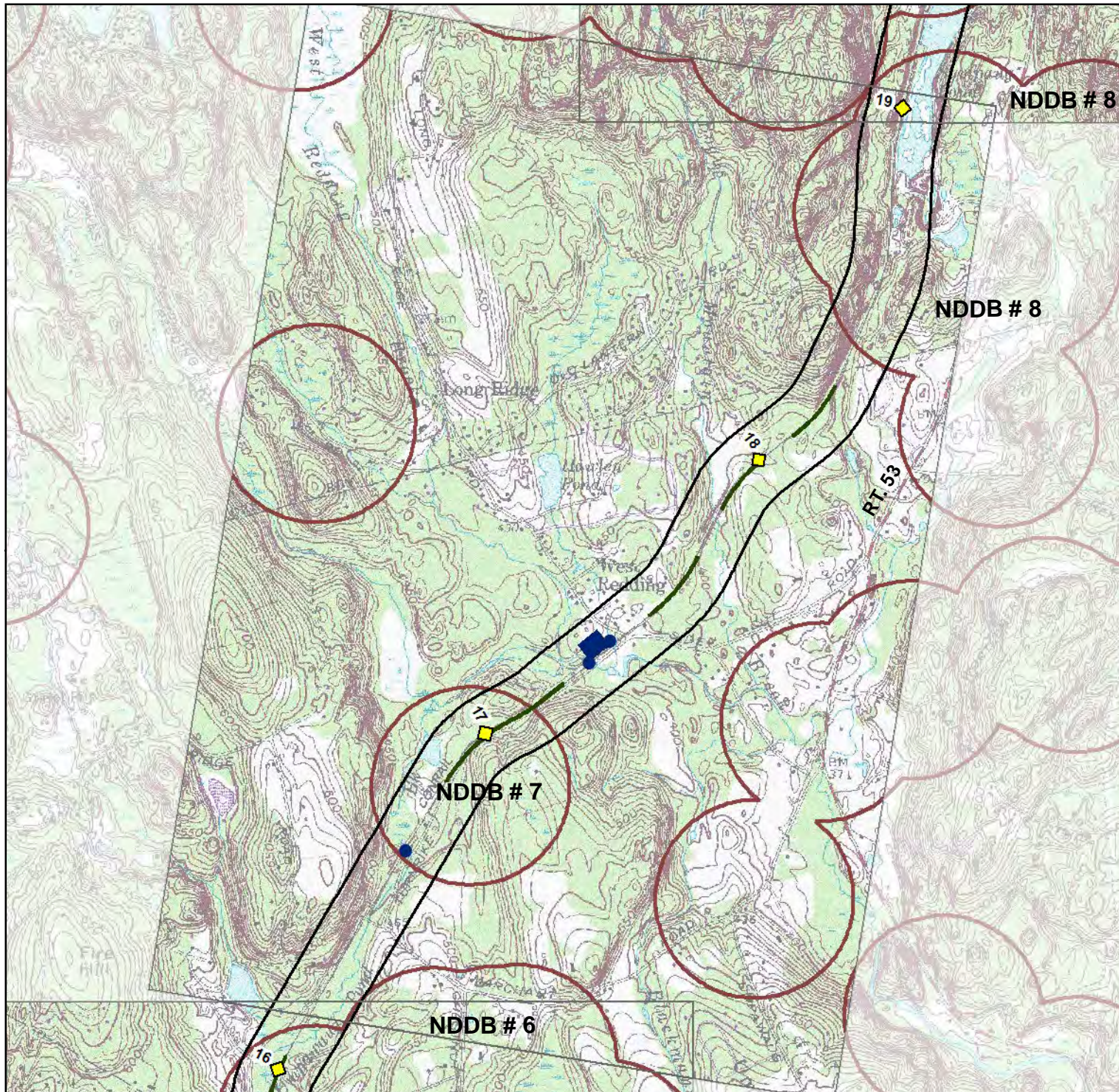
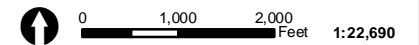
**State Project # 302-008**

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- Study Corridor
- CT NDDB Record - Dec. 1, 2010
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NDDB Records in  
Study Corridor

**Sheet 7 of 14**

U.S.G.S. Quadrange:  
Bethel, CT



# Danbury Branch Improvement Program Environmental Impact Statement

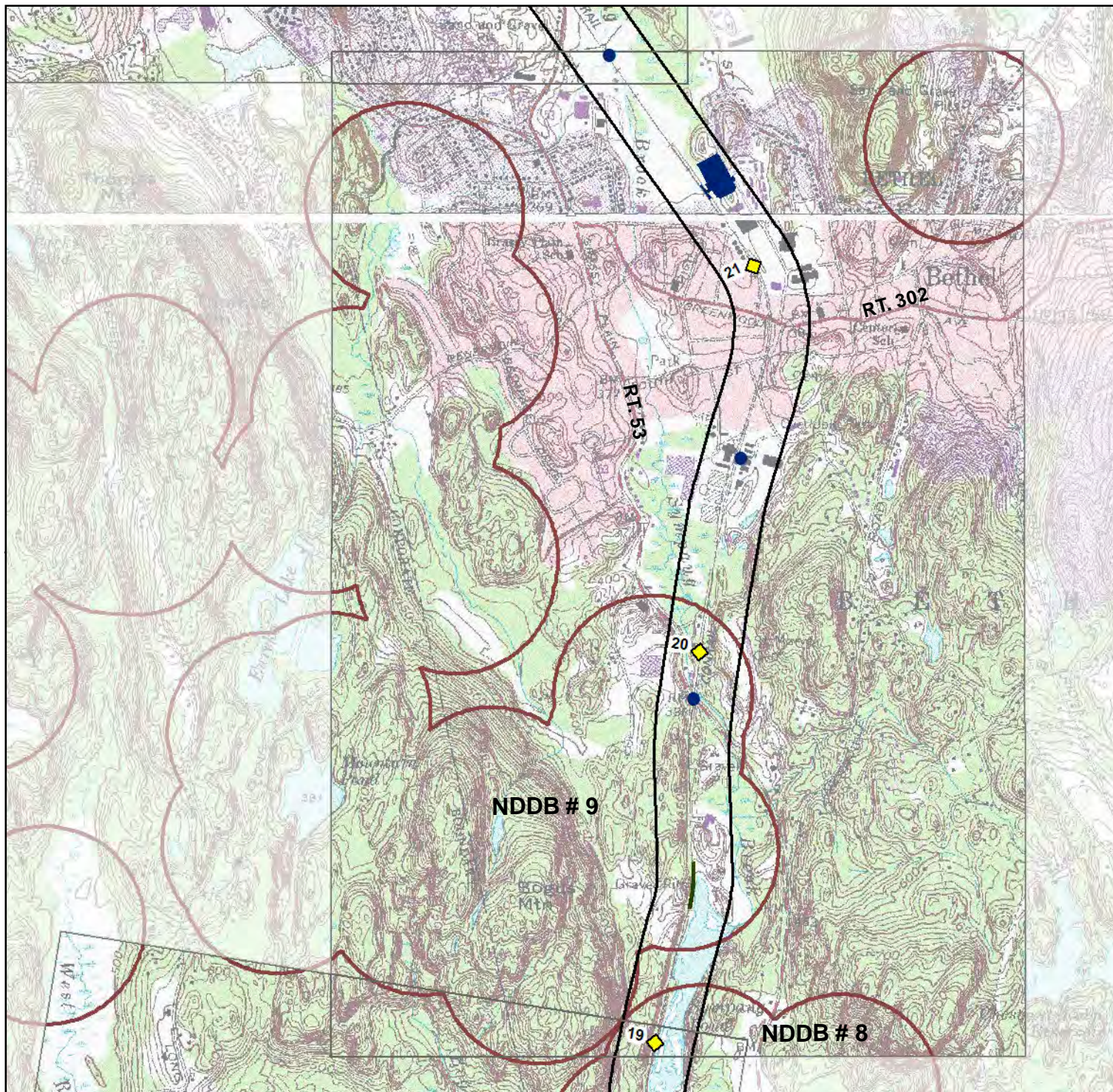
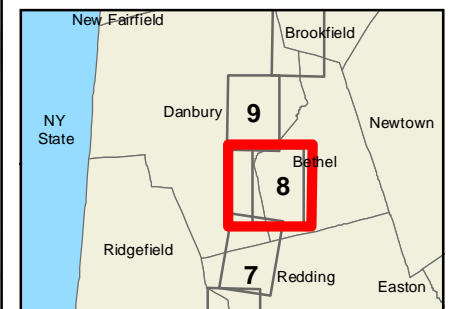
**State Project # 302-008**

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- Study Corridor
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NDDB Records in  
Study Corridor

**Sheet 8 of 14**

U.S.G.S. Quadrange:  
Bethel, Danbury, CT





# Danbury Branch Improvement Program Environmental Impact Statement

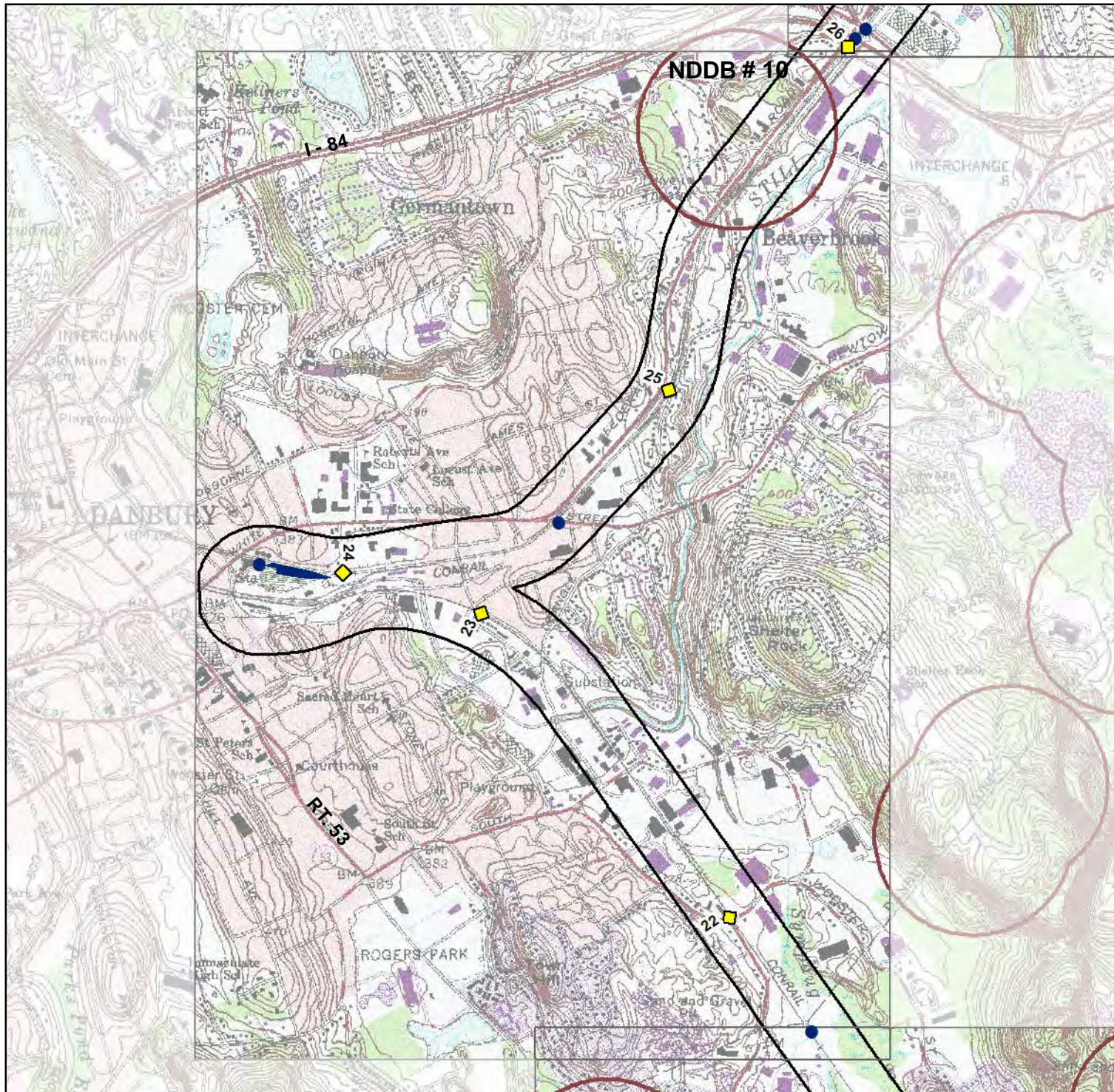
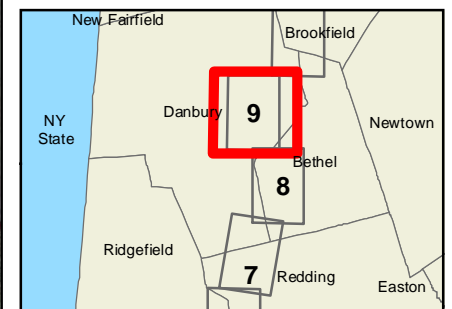
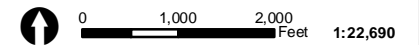
**State Project # 302-008**

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- Approximate Study Milepost (MP)

NDDB Records in  
Study Corridor

**Sheet 9 of 14**

U.S.G.S. Quadrange:  
Danbury, CT



# Danbury Branch Improvement Program Environmental Impact Statement

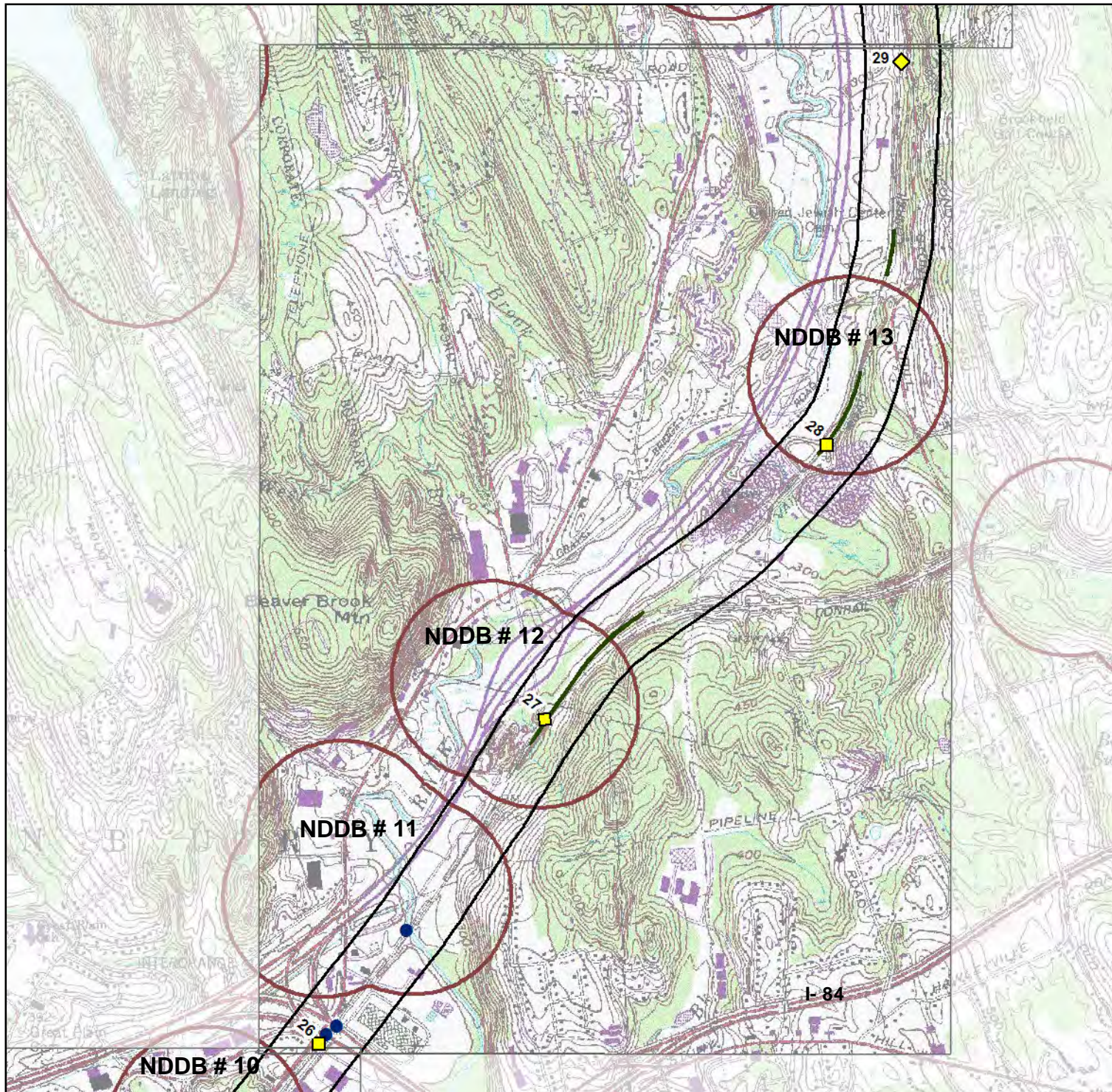
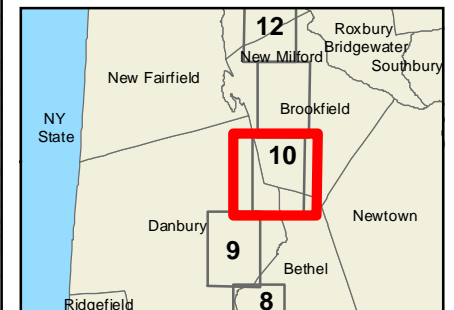
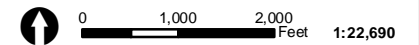
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- ◆ Approximate Study Milepost (MP)







NDDB Records in  
Study Corridor

**Sheet 10 of 14**

U.S.G.S. Quadrange:  
Danbury, CT



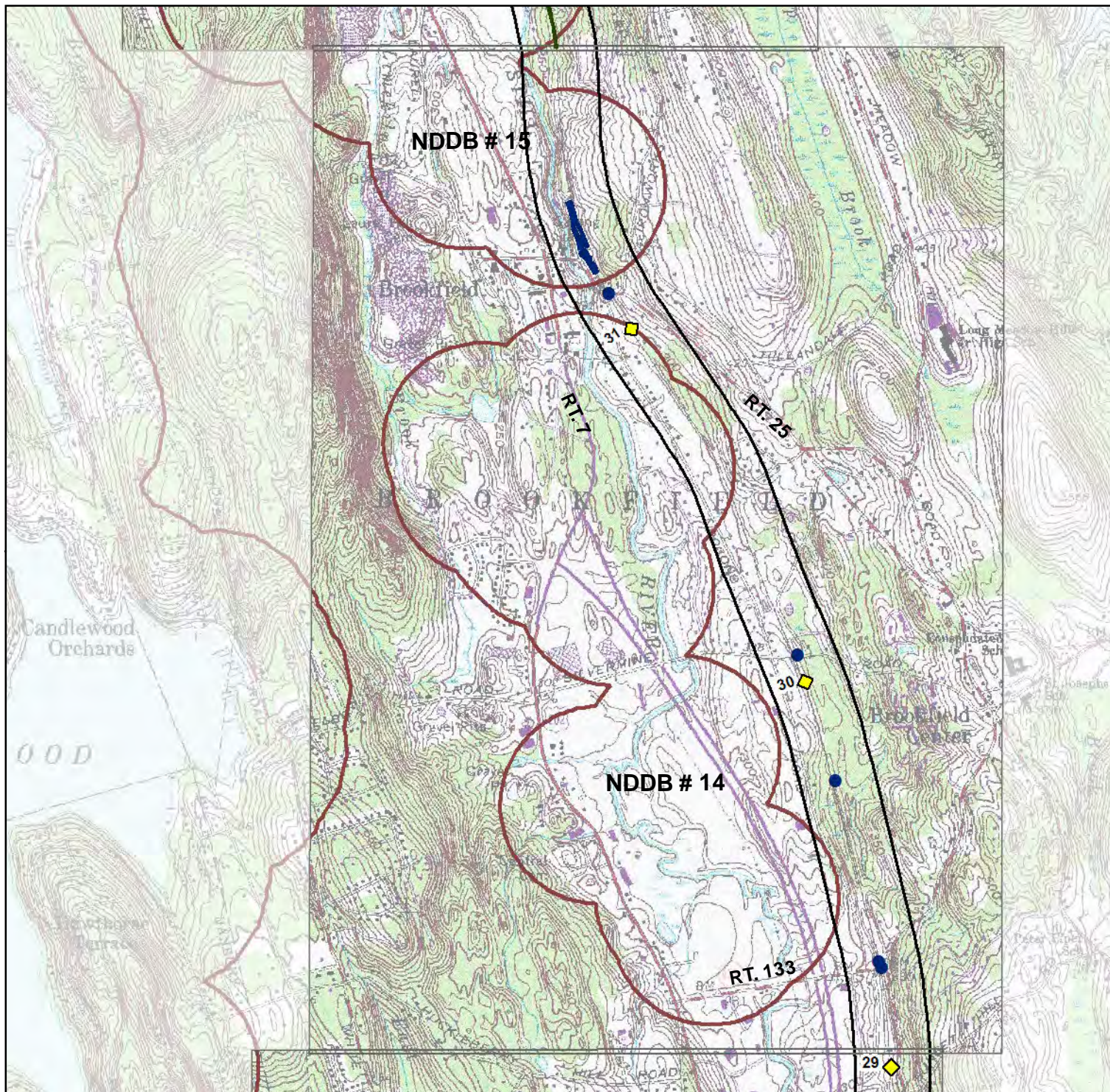
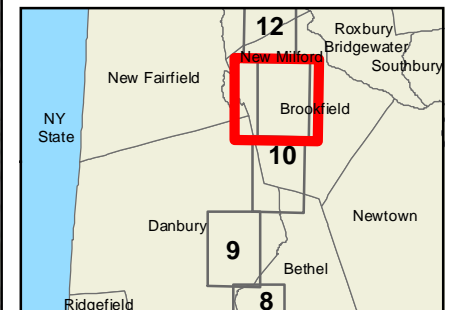
**Danbury Branch  
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Environmental Impact  
Statement  
State Project # 302-008**

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NDDB Records in  
Study Corridor

**Sheet 11 of 14**

U.S.G.S. Quadrange:  
Danbury, CT



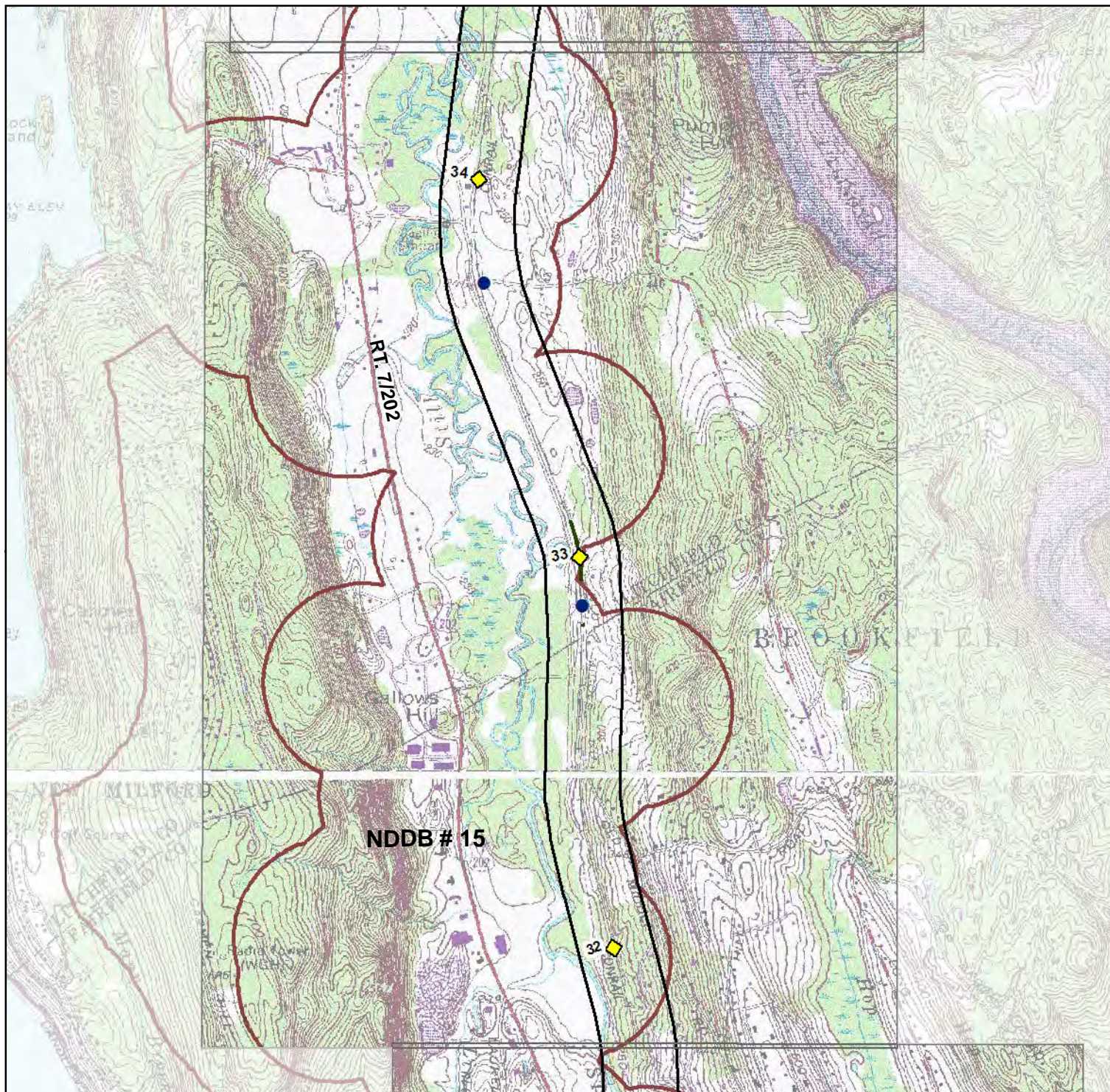
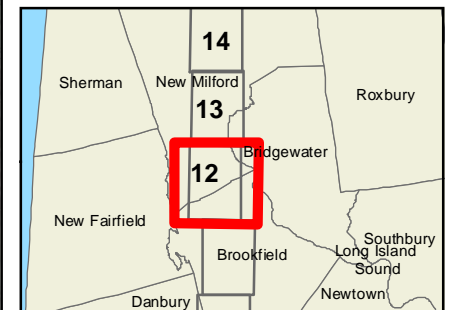
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Environmental Impact  
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State Project # 302-008**

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NDDB Records in Study Corridor

**Sheet 12 of 14**

U.S.G.S. Quadrange:  
Norwalk South, Norwalk North, CT



# Danbury Branch Improvement Program Environmental Impact Statement

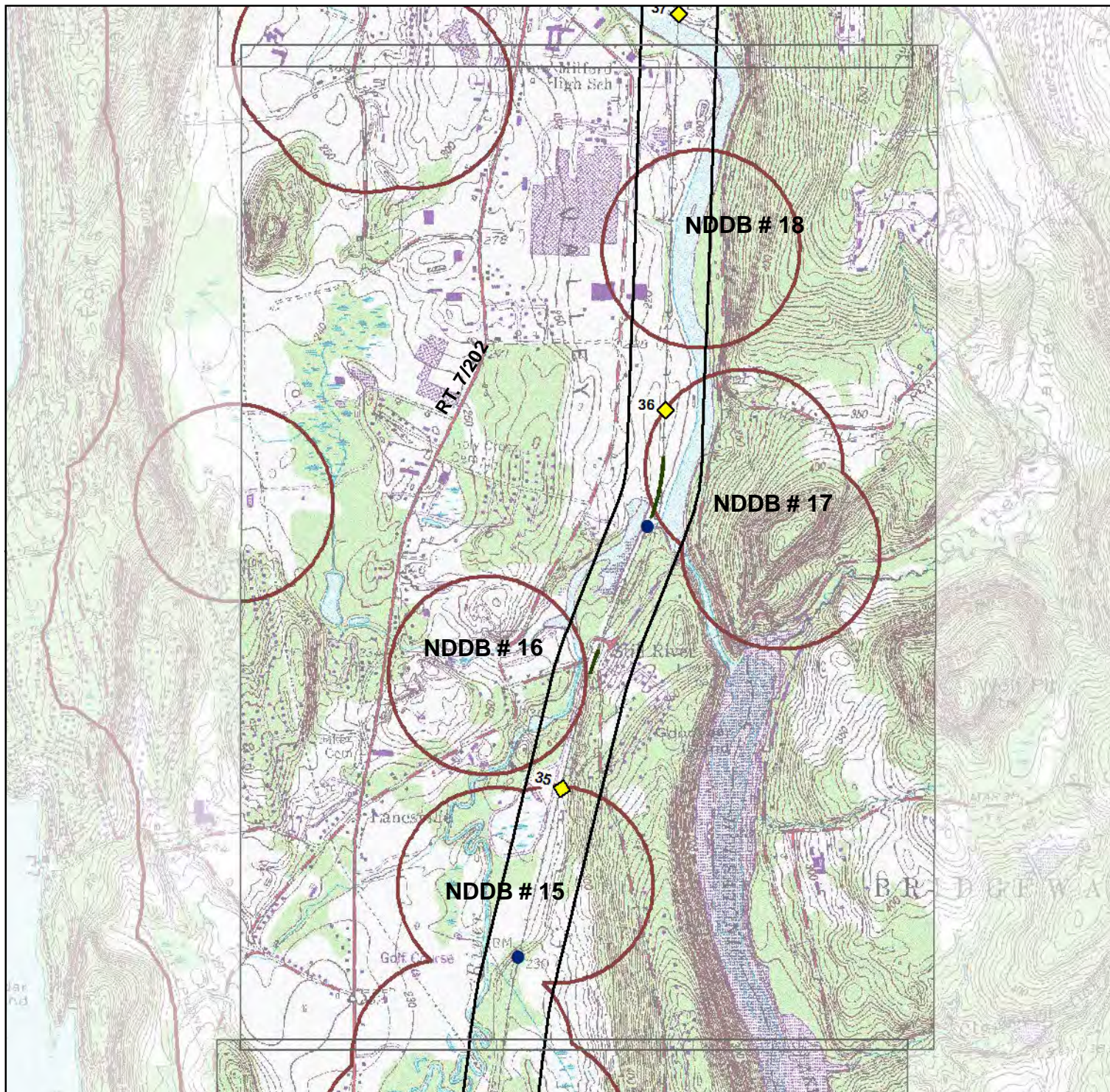
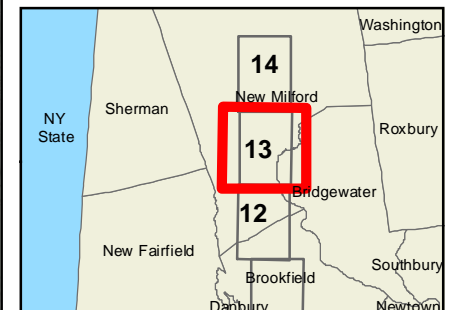
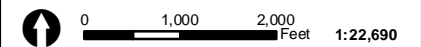
**State Project # 302-008**

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NDDB Records in  
Study Corridor

**Sheet 13 of 14**

U.S.G.S. Quadrange:  
New Milford, CT



# Danbury Branch Improvement Program Environmental Impact Statement

State Project # 302-008

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NDDB Records in  
Study Corridor

**Sheet 14 of 14**

U.S.G.S. Quadrange:  
New Milford, CT

